sky130_osu_sc_18T_hs_ff_1P95_150C.ccs Library

Cell Groups
SKY130_OSU_SC_18T_HS__ADDFx
SKY130_OSU_SC_18T_HS__ADDHx
SKY130_OSU_SC_18T_HS__AND2x
SKY130_OSU_SC_18T_HS__AOI21
SKY130_OSU_SC_18T_HS__AOI22
SKY130_OSU_SC_18T_HS__BUFx
SKY130_OSU_SC_18T_HS__DFFRx
SKY130_OSU_SC_18T_HS__DFFSRx
SKY130_OSU_SC_18T_HS__DFFSx
SKY130_OSU_SC_18T_HS__DFFx
SKY130_OSU_SC_18T_HS__INVx
SKY130_OSU_SC_18T_HS__MUX2
SKY130_OSU_SC_18T_HS__NAND2x
SKY130_OSU_SC_18T_HS__NOR2x
SKY130_OSU_SC_18T_HS__OAI21
SKY130_OSU_SC_18T_HS__OAI22
SKY130_OSU_SC_18T_HS__OR2x
SKY130_OSU_SC_18T_HS__TBUFIx
SKY130_OSU_SC_18T_HS__TNBUFIx
SKY130_OSU_SC_18T_HS__XNOR2
SKY130_OSU_SC_18T_HS__XOR2
SKY130_OSU_SC_18T_HS_x

SKY130_OSU_SC_18T_HS__ADDFx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT			OUTPUT		
A	**B**	**CI**	**CO**	**CON**	**S**
0	**0**	**0**	**0**	**1**	**0**
0	**0**	**1**	**0**	**1**	**1**
0	**1**	**0**	**0**	**1**	**1**
0	**1**	**1**	**1**	**0**	**0**
1	**0**	**0**	**0**	**1**	**1**
1	**0**	**1**	**1**	**0**	**0**
1	**1**	**0**	**1**	**0**	**0**
1	**1**	**1**	**1**	**0**	**1**

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__addf_1	46.88640
sky130_osu_sc_18T_hs__addf_l	46.88640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)		
	A	**B**	**CI**	**CO**	**CON**	**S**
sky130_osu_sc_18T_hs__addf_1	0.02106	0.02082	0.01581	3.73700	1.98043	3.80446
sky130_osu_sc_18T_hs__addf_l	0.02104	0.02079	0.01580	2.73391	1.98749	2.77200

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__addf_1	0.00000	2798.07000	3500.05000
sky130_osu_sc_18T_hs__addf_l	0.00000	2232.18000	2934.13000

Delay Information

Delay(ns) to CO rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addf_1	A->CO (RR)	0.10328	1.29483	23.05650
	B->CO (RR)	0.10376	1.26986	22.19370
	CI->CO (RR)	0.09889	1.34445	23.81630
	CON->CO (FR)	0.01767	0.51040	8.64387
sky130_osu_sc_18T_hs__addf_l	A->CO (RR)	0.10727	1.28578	20.34620
	B->CO (RR)	0.10766	1.26534	19.77200
	CI->CO (RR)	0.10291	1.33952	21.12020
	CON->CO (FR)	0.02067	0.60943	9.49496

Delay(ns) to CO falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addf_1	A->CO (FF)	0.11178	1.42143	25.33050
	B->CO (FF)	0.09780	1.39264	24.74050
	CI->CO (FF)	0.09611	1.45401	25.94270
	CON->CO (RF)	0.02000	0.56154	9.67135
sky130_osu_sc_18T_hs__addf_l	A->CO (FF)	0.10744	1.29688	20.49860
	B->CO (FF)	0.09395	1.27849	20.22870
	CI->CO (FF)	0.09179	1.33066	21.12830
	CON->CO (RF)	0.02061	0.56756	8.98866

Delay(ns) to CON rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addf_1	A->CON (FR)	0.08216	0.60204	7.96135
	B->CON (FR)	0.06874	0.60788	8.13905
	CI->CON (FR)	0.06650	0.63865	8.62955
sky130_osu_sc_18T_hs__addf_l	A->CON (FR)	0.07823	0.59909	7.97830
	B->CON (FR)	0.06514	0.60514	8.15391
	CI->CON (FR)	0.06255	0.63569	8.64606

Delay(ns) to CON falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addf_1	A->CON (RF)	0.07733	0.56600	7.48441
	B->CON (RF)	0.07830	0.58465	7.65744
	CI->CON (RF)	0.07296	0.62215	8.29979
sky130_osu_sc_18T_hs__addf_l	A->CON (RF)	0.07420	0.56360	7.50187
	B->CON (RF)	0.07541	0.58269	7.67310
	CI->CON (RF)	0.06983	0.61997	8.31743

Delay(ns) to S rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addf_1	A->S (-R)	0.16645	1.30110	21.44590
	B->S (-R)	0.18120	1.28504	20.36370
	CI->S (-R)	0.14950	1.33238	22.05500
	CON->S (RR)	0.05710	0.45798	6.94201
sky130_osu_sc_18T_hs__addf_l	A->S (-R)	0.16289	1.24547	18.39940
	B->S (-R)	0.15328	1.21333	17.67620
	CI->S (-R)	0.14599	1.27835	19.03230
	CON->S (RR)	0.05883	0.52110	7.38105

Delay(ns) to S falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addf_1	A->S (-F)	0.16296	1.33538	21.92040
	B->S (-F)	0.15168	1.27103	20.99850
	CI->S (-F)	0.15970	1.38960	22.68420
	CON->S (FF)	0.06371	0.55141	8.30500
sky130_osu_sc_18T_hs__addf_l	A->S (-F)	0.15367	1.21868	17.76520
	B->S (-F)	0.14309	1.16427	17.13440
	CI->S (-F)	0.15029	1.27417	18.54910
	CON->S (FF)	0.06072	0.55460	7.63800

Power Information

Internal switching power(pJ) to CO rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addf_1	A	0.04615	0.06638	0.46024
	B	0.05199	0.06997	0.41976
	CI	0.05018	0.07047	0.46250
sky130_osu_sc_18T_hs__addf_l	A	0.03500	0.05068	0.32039
	B	0.04122	0.05522	0.29587
	CI	0.03895	0.05497	0.32255

Internal switching power(pJ) to CO falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addf_1	A	0.07331	0.09619	0.54517
	B	0.06489	0.08435	0.48593
	CI	0.07020	0.09411	0.54412
sky130_osu_sc_18T_hs__addf_l	A	0.05706	0.07513	0.38900
	B	0.05006	0.06651	0.35083
	CI	0.05388	0.07298	0.38878

Internal switching power(pJ) to CON rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addf_1	A	0.05506	0.07203	0.34662
	B	0.04960	0.06550	0.32501
	CI	0.05254	0.07054	0.35085
sky130_osu_sc_18T_hs__addf_l	A	0.04791	0.06358	0.31450
	B	0.04258	0.05729	0.29412
	CI	0.04523	0.06188	0.31708

Internal switching power(pJ) to CON falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addf_1	A	0.03209	0.04751	0.29560
	B	0.03012	0.04420	0.27729
	CI	0.03658	0.05247	0.30270
sky130_osu_sc_18T_hs__addf_l	A	0.02528	0.03911	0.25847
	B	0.02888	0.04132	0.24001
	CI	0.02958	0.04378	0.26364

Internal switching power(pJ) to S rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addf_1	A	0.04998	0.07047	0.52596
	B	0.08153	0.10220	0.43208
	CI	0.05812	0.07945	0.48606
sky130_osu_sc_18T_hs__addf_l	A	0.04905	0.07057	0.52937
	B	0.06809	0.09050	0.45158
	CI	0.05712	0.07943	0.48950

Internal switching power(pJ) to S falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addf_1	A	0.14373	0.16656	0.56306
	B	0.10916	0.13308	0.54265
	CI	0.10231	0.12466	0.48966
sky130_osu_sc_18T_hs__addf_l	A	0.11954	0.14397	0.55867
	B	0.09768	0.12034	0.49859
	CI	0.08078	0.10447	0.48728

SKY130_OSU_SC_18T_HS__ADDHx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT		
A	B	CO	CON	S
0	0	0	1	0
0	1	0	0	1
1	0	0	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__addh_1	27.83880
sky130_osu_sc_18T_hs__addh_l	27.83880

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)		
	A	B	CO	CON	S
sky130_osu_sc_18T_hs__addh_1	0.01013	0.01123	3.89450	2.09749	3.94886
sky130_osu_sc_18T_hs__addh_l	0.01013	0.01123	2.39152	2.10103	2.42159

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__addh_1	0.00000	3078.48000	3507.43000
sky130_osu_sc_18T_hs__addh_l	0.00000	2746.02000	3247.24000

Delay Information

Delay(ns) to CO rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addh_1	A->CO (RR)	0.06664	0.48366	7.10624
	B->CO (RR)	0.06924	0.47555	7.21182
sky130_osu_sc_18T_hs__addh_l	A->CO (RR)	0.06690	0.55398	7.37320
	B->CO (RR)	0.06948	0.54238	7.32965

Delay(ns) to CO falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__addh_1	A->CO (FF)	0.05395	0.50023	7.95420
	B->CO (FF)	0.05870	0.52434	8.23546
sky130_osu_sc_18T_hs__addh_l	A->CO (FF)	0.05261	0.51905	7.09106
	B->CO (FF)	0.05704	0.54334	7.37706

Delay(ns) to CON rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__addh_1	A->CON (RR)	B	0.08987	0.40281	4.19450
	A->CON (FR)	!B	0.04329	0.58922	8.33801
	B->CON (RR)	A	0.09146	0.39388	4.29242
	B->CON (FR)	!A	0.05631	0.56611	7.88222
sky130_osu_sc_18T_hs__addh_l	A->CON (RR)	B	0.08103	0.39284	4.30042
	A->CON (FR)	!B	0.03874	0.58487	8.34233
	B->CON (RR)	A	0.08266	0.38121	4.27654
	B->CON (FR)	!A	0.05171	0.56074	7.88862

Delay(ns) to CON falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__addh_1	A->CON (FF)	B	0.09125	0.52557	6.20519
	A->CON (RF)	!B	0.04568	0.59136	8.36330
	B->CON (FF)	A	0.08753	0.56481	6.83791
	B->CON (RF)	!A	0.05498	0.57347	7.93440
sky130_osu_sc_18T_hs__addh_l	A->CON (FF)	B	0.08284	0.50539	6.08428
	A->CON (RF)	!B	0.04184	0.58737	8.36687
	B->CON (FF)	A	0.07928	0.54435	6.71119
	B->CON (RF)	!A	0.05115	0.56993	7.93956

Delay(ns) to S rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__addh_1	A->S (RR)	!B	0.06977	1.32059	24.48560
	A->S (FR)	B	0.11657	1.25473	22.25960
	B->S (RR)	!A	0.08022	1.28064	23.36490
	B->S (FR)	A	0.11220	1.32139	23.57540
	CON->S (FR)	-	0.01987	0.54744	9.31252
sky130_osu_sc_18T_hs__addh_l	A->S (RR)	!B	0.06940	1.22216	18.94470
	A->S (FR)	B	0.11210	1.13631	16.55920
	B->S (RR)	!A	0.08029	1.18910	18.18610
	B->S (FR)	A	0.10745	1.19232	17.51530
	CON->S (FR)	-	0.02236	0.62487	9.46653

Delay(ns) to S falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__addh_1	A->S (FF)	!B	0.06947	1.35819	25.18460
	A->S (RF)	B	0.11437	1.03081	17.51650
	B->S (FF)	!A	0.08250	1.33982	24.80730
	B->S (RF)	A	0.11596	1.02162	17.60790
	CON->S (RF)	-	0.01922	0.55774	9.76280
sky130_osu_sc_18T_hs__addh_l	A->S (FF)	!B	0.06512	1.19851	18.57290
	A->S (RF)	B	0.10575	0.93276	13.20690
	B->S (FF)	!A	0.07811	1.17611	18.15210
	B->S (RF)	A	0.10738	0.91964	13.14770
	CON->S (RF)	-	0.02022	0.57417	8.82407

Power Information

Internal switching power(pJ) to CO rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addh_1	A	0.00000	0.00000	0.00000
	A	0.04149	0.05265	0.23054
	B	0.00000	0.00000	0.00000
	B	0.04031	0.05294	0.26899
sky130_osu_sc_18T_hs__addh_1	A	0.00000	0.00000	0.00000
	A	0.03780	0.04906	0.22496
	B	0.00000	0.00000	0.00000
	B	0.03646	0.04863	0.25052

Internal switching power(pJ) to CO falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__addh_1	A	0.00000	0.00000	0.00000
	A	0.04333	0.06006	0.34898
	B	0.00000	0.00000	0.00000
	B	0.04907	0.06859	0.38886
sky130_osu_sc_18T_hs__addh_1	A	0.00000	0.00000	0.00000
	A	0.03627	0.05020	0.26899
	B	0.00000	0.00000	0.00000
	B	0.04160	0.05748	0.29352

Internal switching power(pJ) to CON rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__addh_1	A	B	0.00000	0.00000	0.00000
	A	B	0.03052	0.04163	0.21367
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.04620	0.05831	0.22169
	B	A	0.00000	0.00000	0.00000
	B	A	0.02945	0.04202	0.25083
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.04741	0.05787	0.21313
sky130_osu_sc_18T_hs__addh_l	A	B	0.00000	0.00000	0.00000
	A	B	0.02695	0.03822	0.21360
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.03696	0.04686	0.17453
	B	A	0.00000	0.00000	0.00000
	B	A	0.02571	0.03794	0.23885
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.03838	0.04665	0.16711

Internal switching power(pJ) to CON falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__addh_1	A	B	0.00000	0.00000	0.00000
	A	B	0.03855	0.05385	0.29603
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.04850	0.06093	0.22577
	B	A	0.00000	0.00000	0.00000
	B	A	0.04511	0.06280	0.32729
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.04090	0.05249	0.21487
sky130_osu_sc_18T_hs__addh_l	A	B	0.00000	0.00000	0.00000
	A	B	0.03435	0.04816	0.26339
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.04340	0.05214	0.16569
	B	A	0.00000	0.00000	0.00000
	B	A	0.04079	0.05656	0.28788
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.03584	0.04419	0.15918

Internal switching power(pJ) to S rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__addh_1	A	B	0.00000	0.00000	0.00000
	A	B	0.05456	0.07128	0.36147
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.07448	0.08789	0.30328
	B	A	0.00000	0.00000	0.00000
	B	A	0.06377	0.08337	0.40517
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.06291	0.07532	0.27224
sky130_osu_sc_18T_hs__addh_l	A	B	0.00000	0.00000	0.00000
	A	B	0.04439	0.05829	0.27748
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.05893	0.06771	0.18202
	B	A	0.00000	0.00000	0.00000
	B	A	0.05211	0.06799	0.30481
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.04945	0.05776	0.17092

Internal switching power(pJ) to S falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__addh_1	A	B	0.00000	0.00000	0.00000
	A	B	0.05180	0.06300	0.24364
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.06394	0.07684	0.27328
	B	A	0.00000	0.00000	0.00000
	B	A	0.05053	0.06309	0.28127
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.06582	0.07755	0.26977
sky130_osu_sc_18T_hs__addh_l	A	B	0.00000	0.00000	0.00000
	A	B	0.04021	0.05145	0.22747
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.04315	0.05310	0.17946
	B	A	0.00000	0.00000	0.00000
	B	A	0.03882	0.05099	0.25181
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.04500	0.05346	0.17364

SKY130_OSU_SC_18T_HS__AND2x

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__and2_1	12.45420
sky130_osu_sc_18T_hs__and2_2	15.38460
sky130_osu_sc_18T_hs__and2_4	21.24540
sky130_osu_sc_18T_hs__and2_6	27.10620
sky130_osu_sc_18T_hs__and2_8	32.96700
sky130_osu_sc_18T_hs__and2_l	12.45420

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_osu_sc_18T_hs__and2_1	0.00548	0.00565	3.97023
sky130_osu_sc_18T_hs__and2_2	0.00548	0.00566	7.60697
sky130_osu_sc_18T_hs__and2_4	0.00548	0.00567	14.41889
sky130_osu_sc_18T_hs__and2_6	0.00552	0.00567	21.06676
sky130_osu_sc_18T_hs__and2_8	0.00551	0.00570	26.97512
sky130_osu_sc_18T_hs__and2_l	0.00433	0.00447	2.72747

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__and2_1	0.00000	1463.98000	2336.31000
sky130_osu_sc_18T_hs__and2_2	0.00000	2341.02000	2345.87000
sky130_osu_sc_18T_hs__and2_4	0.00000	4093.53000	4673.73000
sky130_osu_sc_18T_hs__and2_6	0.00000	5845.74000	7005.44000
sky130_osu_sc_18T_hs__and2_8	0.00000	7595.98000	9335.29000
sky130_osu_sc_18T_hs__and2_l	0.00000	756.28600	1206.26000

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__and2_1	A->Y (RR)	0.05084	0.45666	7.34502
	B->Y (RR)	0.05398	0.42759	6.82486
sky130_osu_sc_18T_hs__and2_2	A->Y (RR)	0.05976	0.41463	7.35292
	B->Y (RR)	0.06307	0.38239	6.77588
sky130_osu_sc_18T_hs__and2_4	A->Y (RR)	0.08479	0.41690	7.42431
	B->Y (RR)	0.08818	0.38255	6.82249
sky130_osu_sc_18T_hs__and2_6	A->Y (RR)	0.11108	0.43836	7.49310
	B->Y (RR)	0.11443	0.40288	6.87190
sky130_osu_sc_18T_hs__and2_8	A->Y (RR)	0.13671	0.46760	7.56710
	B->Y (RR)	0.14014	0.42925	6.90528
sky130_osu_sc_18T_hs__and2_1	A->Y (RR)	0.05528	0.49485	7.10040
	B->Y (RR)	0.05841	0.46736	6.65040

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__and2_1	**A->Y (FF)**	0.04363	0.45384	7.56515
	B->Y (FF)	0.04536	0.46763	7.71181
sky130_osu_sc_18T_hs__and2_2	**A->Y (FF)**	0.04805	0.38907	7.35907
	B->Y (FF)	0.05047	0.40516	7.55611
sky130_osu_sc_18T_hs__and2_4	**A->Y (FF)**	0.06559	0.37526	7.28283
	B->Y (FF)	0.06820	0.38997	7.49767
sky130_osu_sc_18T_hs__and2_6	**A->Y (FF)**	0.08530	0.39163	7.26752
	B->Y (FF)	0.08783	0.40423	7.48257
sky130_osu_sc_18T_hs__and2_8	**A->Y (FF)**	0.10399	0.40898	7.09724
	B->Y (FF)	0.10682	0.42193	7.31279
sky130_osu_sc_18T_hs__and2_l	**A->Y (FF)**	0.04733	0.50036	7.10754
	B->Y (FF)	0.04994	0.51798	7.31224

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__and2_1	A	0.00000	0.00000	0.00000
	A	0.06879	0.10609	0.65464
	B	0.00000	0.00000	0.00000
	B	0.06797	0.09833	0.55925
sky130_osu_sc_18T_hs__and2_2	A	0.00000	0.00000	0.00000
	A	0.07923	0.11648	0.67868
	B	0.00000	0.00000	0.00000
	B	0.07834	0.10779	0.56566
sky130_osu_sc_18T_hs__and2_4	A	0.00000	0.00000	0.00000
	A	0.10597	0.13868	0.71710
	B	0.00000	0.00000	0.00000
	B	0.10505	0.12991	0.63559
sky130_osu_sc_18T_hs__and2_6	A	0.00000	0.00000	0.00000
	A	0.14696	0.17083	0.75835
	B	0.00000	0.00000	0.00000
	B	0.14597	0.15874	0.60572
sky130_osu_sc_18T_hs__and2_8	A	0.00000	0.00000	0.00000
	A	0.19554	0.20329	0.80785
	B	0.00000	0.00000	0.00000
	B	0.19448	0.18990	0.62526
sky130_osu_sc_18T_hs__and2_l	A	0.00000	0.00000	0.00000
	A	0.03725	0.06213	0.43067
	B	0.00000	0.00000	0.00000
	B	0.03693	0.05821	0.38391

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__and2_1	A	0.00000	0.00000	0.00000
	A	0.04942	0.08682	0.59600
	B	0.00000	0.00000	0.00000
	B	0.05152	0.08840	0.58872
sky130_osu_sc_18T_hs__and2_2	A	0.00000	0.00000	0.00000
	A	0.08788	0.12286	0.62457
	B	0.00000	0.00000	0.00000
	B	0.09009	0.12475	0.61508
sky130_osu_sc_18T_hs__and2_4	A	0.00000	0.00000	0.00000
	A	0.17494	0.19957	0.67933
	B	0.00000	0.00000	0.00000
	B	0.17728	0.20166	0.66645
sky130_osu_sc_18T_hs__and2_6	A	0.00000	0.00000	0.00000
	A	0.26535	0.27840	0.73565
	B	0.00000	0.00000	0.00000
	B	0.26816	0.28084	0.71954
sky130_osu_sc_18T_hs__and2_8	A	0.00000	0.00000	0.00000
	A	0.36284	0.35855	0.79043
	B	0.00000	0.00000	0.00000
	B	0.36625	0.35896	0.76990
sky130_osu_sc_18T_hs__and2_l	A	0.00000	0.00000	0.00000
	A	0.02918	0.05346	0.38381
	B	0.00000	0.00000	0.00000
	B	0.03086	0.05525	0.38503

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__and2_1	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.00336	0.00330	0.00325
sky130_osu_sc_18T_hs__and2_2	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.01350	0.01344	0.01338
sky130_osu_sc_18T_hs__and2_4	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.03376	0.03371	0.03364
sky130_osu_sc_18T_hs__and2_6	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.05399	0.05394	0.05386
sky130_osu_sc_18T_hs__and2_8	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.07426	0.07422	0.07413
sky130_osu_sc_18T_hs__and2_l	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.00013	0.00009	0.00003

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__and2_1	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.01710	0.01714	0.01713
sky130_osu_sc_18T_hs__and2_2	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.02727	0.02731	0.02730
sky130_osu_sc_18T_hs__and2_4	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.04759	0.04763	0.04763
sky130_osu_sc_18T_hs__and2_6	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.06794	0.06798	0.06799
sky130_osu_sc_18T_hs__and2_8	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.08819	0.08824	0.08825
sky130_osu_sc_18T_hs__and2_l	(!B * !Y)	0.00000	0.00000	0.00000
	(!B * !Y)	0.01044	0.01048	0.01046

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__and2_1	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.00369	0.00368	0.00368
sky130_osu_sc_18T_hs__and2_2	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.01382	0.01380	0.01381
sky130_osu_sc_18T_hs__and2_4	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.03406	0.03405	0.03406
sky130_osu_sc_18T_hs__and2_6	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.05429	0.05429	0.05430
sky130_osu_sc_18T_hs__and2_8	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.07450	0.07450	0.07452
sky130_osu_sc_18T_hs__and2_1	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.00038	0.00036	0.00036

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__and2_1	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.01707	0.01692	0.01683
sky130_osu_sc_18T_hs__and2_2	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.02724	0.02709	0.02700
sky130_osu_sc_18T_hs__and2_4	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.04756	0.04741	0.04731
sky130_osu_sc_18T_hs__and2_6	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.06787	0.06772	0.06762
sky130_osu_sc_18T_hs__and2_8	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.08816	0.08801	0.08790
sky130_osu_sc_18T_hs__and2_l	(!A * !Y)	0.00000	0.00000	0.00000
	(!A * !Y)	0.01044	0.01032	0.01028

SKY130_OSU_SC_18T_HS__AOI21

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT			OUTPUT
A0	A1	B0	Y
0	x	0	1
x	x	1	0
1	0	0	1
1	1	x	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__aoi21_l	12.45420

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	B0	Y
sky130_osu_sc_18T_hs__aoi21_l	0.00529	0.00543	0.00525	1.91434

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__aoi21_l	0.00000	595.53000	1161.28000

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__aoi21_l	A0->Y (FR)	0.04455	0.55803	7.76468
	A1->Y (FR)	0.03859	0.53065	7.40844
	B0->Y (FR)	0.03110	0.60113	8.47104

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__aoi21_l	A0->Y (RF)	0.04261	0.49896	6.84496
	A1->Y (RF)	0.03927	0.53988	7.44583
	B0->Y (RF)	0.02377	0.49937	7.09361

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	A0	0.00000	0.00000	0.00000
	A0	0.01672	0.02868	0.19776
	A1	0.00000	0.00000	0.00000
	A1	0.01410	0.02646	0.18902
	B0	0.00953	0.02732	0.24010

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	A0	0.00000	0.00000	0.00000
	A0	0.02909	0.03780	0.16288
	A1	0.00000	0.00000	0.00000
	A1	0.03015	0.04022	0.17026
	B0	0.02374	0.03470	0.16375

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	-0.00302	-0.00382	0.00250
	(!A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(!A1 * B0 * !Y)	0.00394	0.00387	0.00392
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	-0.00600	-0.00602	-0.00603

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	0.01637	0.01620	0.01450
	(!A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(!A1 * B0 * !Y)	0.01628	0.01631	0.01628
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	0.00666	0.00648	0.00642

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	(A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * !Y)	-0.00297	-0.00376	0.00258
	(!A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(!A0 * B0 * !Y)	0.00399	0.00390	0.00397
	(!A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * Y)	-0.00640	-0.00645	-0.00651

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	(A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * !Y)	0.01632	0.01617	0.01446
	(!A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(!A0 * B0 * !Y)	0.01621	0.01624	0.01620
	(!A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * Y)	0.00674	0.00678	0.00676

Passive power(pJ) for B0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	(A0 * A1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !Y)	-0.00189	-0.00187	-0.00019

Passive power(pJ) for B0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi21_l	(A0 * A1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !Y)	0.01394	0.01354	0.00831

SKY130_OSU_SC_18T_HS__AOI22

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT				OUTPUT
A0	A1	B0	B1	Y
0	x	0	x	1
0	x	1	0	1
x	x	1	1	0
1	0	0	x	1
1	0	1	0	1
1	1	x	x	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__aoi22_l	15.38460

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A0	A1	B0	B1	Y
sky130_osu_sc_18T_hs__aoi22_l	0.00530	0.00543	0.00557	0.00537	1.80042

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__aoi22_l	0.00000	659.56500	2302.03000

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__aoi22_l	A0->Y (FR)	0.05565	0.56687	7.60456
	A1->Y (FR)	0.05002	0.54911	7.40577
	B0->Y (FR)	0.03233	0.58772	8.12684
	B1->Y (FR)	0.03769	0.61199	8.42167

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__aoi22_l	A0->Y (RF)	0.05674	0.50347	6.57347
	A1->Y (RF)	0.05337	0.54365	7.17198
	B0->Y (RF)	0.02705	0.51304	7.13786
	B1->Y (RF)	0.03030	0.47266	6.53242

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	A0	0.02061	0.03296	0.21876
	A1	0.01803	0.02997	0.20700
	B0	0.01020	0.02723	0.23890
	B1	0.01271	0.02970	0.24252

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	A0	0.03388	0.04291	0.18012
	A1	0.03500	0.04518	0.18652
	B0	0.05103	0.06149	0.18608
	B1	0.04909	0.05826	0.17643

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A1 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * B1 * !Y)	-0.00215	-0.00266	0.01001
	(!A1 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(!A1 * B0 * B1 * !Y)	0.01381	0.01372	0.01382
	(!A1 * B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A1 * B0 * !B1 * Y)	-0.00604	-0.00605	-0.00607
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	-0.00602	-0.00602	-0.00605

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A1 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * B1 * !Y)	0.02622	0.02580	0.02182
	(!A1 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(!A1 * B0 * B1 * !Y)	0.02619	0.02626	0.02614
	(!A1 * B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A1 * B0 * !B1 * Y)	0.00661	0.00644	0.00637
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	0.00663	0.00646	0.00639

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A0 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * B1 * !Y)	-0.00209	-0.00260	0.01012
	(!A0 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(!A0 * B0 * B1 * !Y)	0.01380	0.01370	0.01384
	(!A0 * B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * B0 * !B1 * Y)	-0.00644	-0.00649	-0.00654
	(!A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * Y)	-0.00642	-0.00647	-0.00652

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A0 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * B1 * !Y)	0.02623	0.02577	0.02181
	(!A0 * B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(!A0 * B0 * B1 * !Y)	0.02613	0.02618	0.02604
	(!A0 * B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * B0 * !B1 * Y)	0.00670	0.00673	0.00671
	(!A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * Y)	0.00672	0.00675	0.00673

Passive power(pJ) for B0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A0 * A1 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * B1 * !Y)	-0.00178	-0.00176	-0.00051
	(A0 * A1 * !B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !B1 * !Y)	0.00768	0.00763	0.00770
	(!A1 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B1 * Y)	-0.00660	-0.00662	-0.00669
	(!A0 * A1 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * A1 * !B1 * Y)	-0.00661	-0.00663	-0.00671

Passive power(pJ) for B0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A0 * A1 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * B1 * !Y)	0.01432	0.01396	0.00882
	(A0 * A1 * !B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !B1 * !Y)	0.01267	0.01264	0.01205
	(!A1 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B1 * Y)	0.00688	0.00692	0.00689
	(!A0 * A1 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * A1 * !B1 * Y)	0.00686	0.00690	0.00688

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A0 * A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * B0 * !Y)	-0.00179	-0.00177	-0.00053
	(A0 * A1 * !B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !B0 * !Y)	0.00767	0.00764	0.00768
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	-0.00612	-0.00617	-0.00614
	(!A0 * A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * A1 * !B0 * Y)	-0.00614	-0.00613	-0.00616

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__aoi22_l	(A0 * A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * B0 * !Y)	0.01433	0.01396	0.00884
	(A0 * A1 * !B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * A1 * !B0 * !Y)	0.01269	0.01267	0.01207
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	0.00672	0.00657	0.00648
	(!A0 * A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * A1 * !B0 * Y)	0.00670	0.00659	0.00646

SKY130_OSU_SC_18T_HS__BUFx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT	OUTPUT
A	Y
0	0
1	1

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__buf_1	9.52380
sky130_osu_sc_18T_hs__buf_2	12.45420
sky130_osu_sc_18T_hs__buf_4	18.31500
sky130_osu_sc_18T_hs__buf_6	24.17580
sky130_osu_sc_18T_hs__buf_8	30.03660
sky130_osu_sc_18T_hs__buf_l	9.52380

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_osu_sc_18T_hs__buf_1	0.00563	3.96352
sky130_osu_sc_18T_hs__buf_2	0.00564	7.66297
sky130_osu_sc_18T_hs__buf_4	0.00563	14.71646
sky130_osu_sc_18T_hs__buf_6	0.00095	1.80000
sky130_osu_sc_18T_hs__buf_8	0.00566	27.84008
sky130_osu_sc_18T_hs__buf_l	0.00449	2.74479

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__buf_1	0.00000	1176.47000	1177.12000
sky130_osu_sc_18T_hs__buf_2	0.00000	1764.53000	2344.06000
sky130_osu_sc_18T_hs__buf_4	0.00000	2939.71000	4676.09000
sky130_osu_sc_18T_hs__buf_6	0.00000	0.00000	0.00000
sky130_osu_sc_18T_hs__buf_8	0.00000	5288.89000	9337.93000
sky130_osu_sc_18T_hs__buf_l	0.00000	610.32400	610.52700

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__buf_1	**A->Y (RR)**	0.04078	0.39808	6.57730
sky130_osu_sc_18T_hs__buf_2	**A->Y (RR)**	0.04585	0.35070	6.53389
sky130_osu_sc_18T_hs__buf_4	**A->Y (RR)**	0.06299	0.34749	6.62817
sky130_osu_sc_18T_hs__buf_8	**A->Y (RR)**	0.09956	0.38786	6.73674
sky130_osu_sc_18T_hs__buf_l	**A->Y (RR)**	0.04505	0.44012	6.44018

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__buf_1	**A->Y (FF)**	0.04133	0.46654	7.84809
sky130_osu_sc_18T_hs__buf_2	**A->Y (FF)**	0.04641	0.40649	7.77394
sky130_osu_sc_18T_hs__buf_4	**A->Y (FF)**	0.06410	0.39085	7.77747
sky130_osu_sc_18T_hs__buf_8	**A->Y (FF)**	0.10257	0.42517	7.65651
sky130_osu_sc_18T_hs__buf_l	**A->Y (FF)**	0.04560	0.51529	7.44493

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__buf_1	A	0.00000	0.00000	0.00000
	A	0.03688	0.07310	0.57172
sky130_osu_sc_18T_hs__buf_2	A	0.00000	0.00000	0.00000
	A	0.04530	0.08252	0.58874
sky130_osu_sc_18T_hs__buf_4	A	0.00000	0.00000	0.00000
	A	0.06660	0.10556	0.62187
sky130_osu_sc_18T_hs__buf_8	A	0.00000	0.00000	0.00000
	A	0.13387	0.16324	0.68509
sky130_osu_sc_18T_hs__buf_l	A	0.00000	0.00000	0.00000
	A	0.02081	0.04568	0.39668

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__buf_1	A	0.00000	0.00000	0.00000
	A	0.04857	0.08883	0.63160
sky130_osu_sc_18T_hs__buf_2	A	0.00000	0.00000	0.00000
	A	0.08765	0.12547	0.65769
sky130_osu_sc_18T_hs__buf_4	A	0.00000	0.00000	0.00000
	A	0.17608	0.20444	0.71313
sky130_osu_sc_18T_hs__buf_8	A	0.00000	0.00000	0.00000
	A	0.36948	0.36366	0.81567
sky130_osu_sc_18T_hs__buf_l	A	0.00000	0.00000	0.00000
	A	0.02873	0.05486	0.40499

Passive power(pJ) for A rising :

Cell Name	Power(pJ)		
	first	mid	last
sky130_osu_sc_18T_hs__buf_6	0.00000	0.00000	0.00000
	-0.00094	-0.00095	-0.00091

Passive power(pJ) for A falling :

Cell Name	Power(pJ)		
	first	mid	last
sky130_osu_sc_18T_hs__buf_6	0.00000	0.00000	0.00000
	0.00094	0.00095	0.00091

SKY130_OSU_SC_18T_HS__DFFRx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT			OUTPUT	
D	RN	CK	Q	QN
0	1	R	0	1
1	1	R	1	0
x	0	x	0	1
x	1	x	IQ	IQN

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__dffr_1	63.73620
sky130_osu_sc_18T_hs__dffr_l	63.73620

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	RN	CK	Q	QN
sky130_osu_sc_18T_hs__dffr_1	0.00547	0.00531	0.01522	3.64728	3.59838
sky130_osu_sc_18T_hs__dffr_l	0.00547	0.00531	0.01522	2.78509	2.74722

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__dffr_1	0.00000	3723.05000	5977.24000
sky130_osu_sc_18T_hs__dffr_l	0.00000	3157.12000	5411.71000

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffr_1	CK->Q (RR)	0.17533	1.02754	15.51110
	QN->Q (FR)	0.02083	0.59870	10.00120
sky130_osu_sc_18T_hs__dffr_l	CK->Q (RR)	0.17295	1.14160	16.05850
	QN->Q (FR)	0.02280	0.67200	10.55340

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffr_1	CK->Q (RF)	0.18149	1.02236	15.64210
	QN->Q (RF)	0.02266	0.65340	11.11840
	RN->Q (FF)	0.13801	1.01010	15.84420
sky130_osu_sc_18T_hs__dffr_l	CK->Q (RF)	0.18526	1.13472	16.03300
	QN->Q (RF)	0.02251	0.64921	10.30870
	RN->Q (FF)	0.14223	1.12218	16.23390

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffr_1	CK->QN (RR)	0.15866	0.51839	6.04127
	RN->QN (FR)	0.11512	0.50567	6.24005
sky130_osu_sc_18T_hs__dffr_l	CK->QN (RR)	0.16136	0.58367	6.58410
	RN->QN (FR)	0.11823	0.57135	6.78382

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffr_1	**CK->QN (RF)**	0.15463	0.58161	7.02616
sky130_osu_sc_18T_hs__dffr_l	**CK->QN (RF)**	0.14747	0.59142	6.64485

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	hold	CK (R)	-0.05286	-0.04439	0.05857
	setup	CK (R)	0.14039	0.17727	4.69495
sky130_osu_sc_18T_hs__dffr_l	hold	CK (R)	-0.05282	-0.04445	0.05861
	setup	CK (R)	0.13967	0.17529	3.83354

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	hold	CK (R)	-0.06845	-0.19513	3.03603
	setup	CK (R)	0.08752	0.21108	3.51442
sky130_osu_sc_18T_hs__dffr_l	hold	CK (R)	-0.06837	-0.19146	3.91790
	setup	CK (R)	0.08752	0.21108	3.51350

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	hold	CK (R)	-0.05286	-0.04439	0.05857
	setup	CK (R)	0.14039	0.17727	4.69495
sky130_osu_sc_18T_hs__dffr_l	hold	CK (R)	-0.05282	-0.04445	0.05861
	setup	CK (R)	0.13967	0.17529	3.83354

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	hold	CK (R)	-0.06845	-0.19513	3.03603
	setup	CK (R)	0.08752	0.21108	3.51442
sky130_osu_sc_18T_hs__dffr_l	hold	CK (R)	-0.06837	-0.19146	3.91790
	setup	CK (R)	0.08752	0.21108	3.51350

Constraints(ns) for RN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	recovery	CK (R)	0.11159	0.17130	2.29395
	removal	CK (R)	-0.02883	-0.03588	-0.21299
sky130_osu_sc_18T_hs__dffr_l	recovery	CK (R)	0.11073	0.17269	2.35229
	removal	CK (R)	-0.02883	-0.03588	-0.21405

Constraints(ns) for RN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	recovery	CK (R)	0.11159	0.17130	2.29395
	removal	CK (R)	-0.02883	-0.03588	-0.21299
sky130_osu_sc_18T_hs__dffr_l	recovery	CK (R)	0.11073	0.17269	2.35229
	removal	CK (R)	-0.02883	-0.03588	-0.21405

Constraints(ns) for RN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	min_pulse_width	RN ()	0.07854	0.51392	13.33370
	min_pulse_width	RN ()	0.07854	0.51392	13.33370
sky130_osu_sc_18T_hs__dffr_l	min_pulse_width	RN ()	0.07854	0.51392	13.33370
	min_pulse_width	RN ()	0.07854	0.51392	13.33370

Constraints(ns) for CK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	min_pulse_width	CK ()	0.09396	0.51392	13.33370
	min_pulse_width	CK ()	0.09396	0.51392	13.33370
sky130_osu_sc_18T_hs__dffr_l	min_pulse_width	CK ()	0.08625	0.51392	13.33370
	min_pulse_width	CK ()	0.09010	0.51392	13.33370

Constraints(ns) for CK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffr_1	min_pulse_width	CK ()	0.17872	0.51392	13.33370
	min_pulse_width	CK ()	0.07084	0.51392	13.33370
sky130_osu_sc_18T_hs__dffr_l	min_pulse_width	CK ()	0.17872	0.51392	13.33370
	min_pulse_width	CK ()	0.07084	0.51392	13.33370

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	CK	0.00000	0.00000	0.00000
	CK	0.10091	0.12959	0.49265
sky130_osu_sc_18T_hs__dffr_l	CK	0.00000	0.00000	0.00000
	CK	0.09081	0.12130	0.51693

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	CK	0.00000	0.00000	0.00000
	CK	0.09757	0.11522	0.38753
	RN	-0.00204	-0.17684	-3.46569
	RN	0.10151	0.12156	0.41660
sky130_osu_sc_18T_hs__dffr_l	CK	0.00000	0.00000	0.00000
	CK	0.08403	0.10473	0.43217
	RN	-0.00204	-0.15045	-2.64691
	RN	0.08833	0.11135	0.46162

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	CK	0.00000	0.00000	0.00000
	CK	0.07613	0.09380	0.36538
	RN	-0.00204	-0.17542	-3.40990
	RN	0.08417	0.10421	0.39972
sky130_osu_sc_18T_hs__dffr_l	CK	0.00000	0.00000	0.00000
	CK	0.07006	0.09075	0.41775
	RN	-0.00204	-0.14921	-2.60909
	RN	0.07738	0.10045	0.44777

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	CK	0.00000	0.00000	0.00000
	CK	0.08360	0.11228	0.47712
sky130_osu_sc_18T_hs__dffr_l	CK	0.00000	0.00000	0.00000
	CK	0.07028	0.10073	0.49599

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	CK	0.00000	0.00000	0.00000
	CK	0.03815	0.03756	0.04438
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.05644	0.08706	0.61200
	(!CK * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !Q * QN)	0.04113	0.06921	0.54138
sky130_osu_sc_18T_hs__dffr_l	CK	0.00000	0.00000	0.00000
	CK	0.03323	0.03264	0.03946
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.05152	0.08213	0.60706
	(!CK * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !Q * QN)	0.03621	0.06428	0.53645

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	CK	0.00000	0.00000	0.00000
	CK	0.05827	0.05810	0.05640
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.07597	0.10823	0.62894
	(!CK * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !Q * QN)	0.02898	0.05989	0.55092
sky130_osu_sc_18T_hs__dffr_l	CK	0.00000	0.00000	0.00000
	CK	0.05335	0.05318	0.05147
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * Q * !QN) + (!CK * RN * !Q * QN)	0.07104	0.10330	0.62400
	(!CK * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !Q * QN)	0.02405	0.05496	0.54599

Passive power(pJ) for RN rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.04572	0.08892	0.74134
	(!CK * D * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !Q * QN)	0.05146	0.09768	0.81361
sky130_osu_sc_18T_hs__dffr_l	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.04079	0.08399	0.73642
	(!CK * D * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !Q * QN)	0.04653	0.09274	0.80868

Passive power(pJ) for RN falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.03743	0.08385	0.75232
	(!CK * D * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !Q * QN)	0.06690	0.11423	0.82939
sky130_osu_sc_18T_hs__dffr_1	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !Q * QN) + (!CK * !D * !Q * QN)	0.03250	0.07892	0.74739
	(!CK * D * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !Q * QN)	0.06197	0.10930	0.82446

Passive power(pJ) for CK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.04175	0.08431	0.73322
	(D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !Q * QN)	0.03312	0.07907	0.81722
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.03663	0.07867	0.72959
sky130_osu_sc_18T_hs__dffr_1	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.03683	0.07939	0.72827
	(D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !Q * QN)	0.02819	0.07414	0.81230
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.03170	0.07375	0.72467

Passive power(pJ) for CK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffr_1	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.05596	0.10231	0.76140
	(D * RN * !Q * QN)	0.00000	0.00000	0.00000
	(D * RN * !Q * QN)	0.08722	0.13508	1.04004
	(D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !Q * QN)	0.07358	0.11962	0.84527
	(!D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * Q * !QN)	0.09176	0.17092	1.18594
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.05621	0.10158	0.76176
sky130_osu_sc_18T_hs__dffr_l	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.05104	0.09738	0.75644
	(D * RN * !Q * QN)	0.00000	0.00000	0.00000
	(D * RN * !Q * QN)	0.08229	0.13015	1.03512
	(D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !Q * QN)	0.06865	0.11470	0.84035
	(!D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * Q * !QN)	0.08683	0.16599	1.18098
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.05129	0.09665	0.75683

SKY130_OSU_SC_18T_HS__DFFSRx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT				OUTPUT	
D	**RN**	**SN**	**CK**	**Q**	**QN**
0	**1**	**1**	**R**	**0**	**1**
1	**1**	**1**	**R**	**1**	**0**
x	**0**	**x**	**x**	**0**	**1**
x	**1**	**0**	**x**	**1**	**0**
x	**1**	**1**	**x**	**IQ**	**IQN**

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__dffsr_1	69.59700
sky130_osu_sc_18T_hs__dffsr_l	69.59700

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	**RN**	**SN**	**CK**	**Q**	**QN**
sky130_osu_sc_18T_hs__dffsr_1	0.00542	0.00532	0.01154	0.01546	3.90816	3.87295
sky130_osu_sc_18T_hs__dffsr_l	0.00542	0.00532	0.01153	0.01546	2.78383	2.74946

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_osu_sc_18T_hs__dffsr_1	0.00000	4340.46000	5967.88000
sky130_osu_sc_18T_hs__dffsr_l	0.00000	3774.05000	5401.64000

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffsr_1	CK->Q (RR)	0.17735	1.02457	15.92810
	QN->Q (FR)	0.01974	0.58527	9.94540
	RN->Q (RR)	0.14485	1.00826	16.22820
	SN->Q (FR)	0.12596	1.00824	16.21230
sky130_osu_sc_18T_hs__dffsr_l	CK->Q (RR)	0.17969	1.13865	15.95190
	QN->Q (FR)	0.02274	0.66967	10.51370
	RN->Q (RR)	0.14764	1.12262	16.24020
	SN->Q (FR)	0.12867	1.12104	16.22670

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffsr_1	CK->Q (RF)	0.21199	1.05558	16.04800
	QN->Q (RF)	0.02099	0.62350	10.81950
	RN->Q (FF)	0.13515	1.01166	16.35230
sky130_osu_sc_18T_hs__dffsr_l	CK->Q (RF)	0.21935	1.17273	16.05920
	QN->Q (RF)	0.02248	0.64822	10.29240
	RN->Q (FF)	0.14144	1.12848	16.35430

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffsr_1	CK->QN (RR)	0.18972	0.55450	6.25112
	RN->QN (FR)	0.11322	0.51117	6.54941
sky130_osu_sc_18T_hs__dffsr_l	CK->QN (RR)	0.19517	0.62179	6.62104
	RN->QN (FR)	0.11744	0.57803	6.92679

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffsr_1	CK->QN (RF)	0.15722	0.57448	7.13144
	RN->QN (RF)	0.12483	0.55894	7.43078
	SN->QN (FF)	0.10597	0.55881	7.41557
sky130_osu_sc_18T_hs__dffsr_l	CK->QN (RF)	0.15451	0.58932	6.56214
	RN->QN (RF)	0.12274	0.57412	6.85901
	SN->QN (FF)	0.10378	0.57233	6.84478

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	hold	CK (R)	-0.04928	-0.04433	0.10308
	setup	CK (R)	0.13743	0.17548	5.73295
sky130_osu_sc_18T_hs__dffsr_l	hold	CK (R)	-0.05019	-0.04433	0.10213
	setup	CK (R)	0.13433	0.17820	5.09378

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	hold	CK (R)	-0.07950	-0.20463	4.71495
	setup	CK (R)	0.10173	0.22297	3.61256
sky130_osu_sc_18T_hs__dffsr_l	hold	CK (R)	-0.07916	-0.20463	4.32516
	setup	CK (R)	0.10346	0.22274	3.61254

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	hold	CK (R)	-0.04928	-0.04433	0.10308
	setup	CK (R)	0.13743	0.17548	5.73295
sky130_osu_sc_18T_hs__dffsr_l	hold	CK (R)	-0.05019	-0.04433	0.10213
	setup	CK (R)	0.13433	0.17820	5.09378

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	hold	CK (R)	-0.07950	-0.20463	4.71495
	setup	CK (R)	0.10173	0.22297	3.61256
sky130_osu_sc_18T_hs__dffsr_l	hold	CK (R)	-0.07916	-0.20463	4.32516
	setup	CK (R)	0.10346	0.22274	3.61254

Constraints(ns) for RN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	recovery	CK (R)	0.09608	0.15862	5.82940
	removal	CK (R)	-0.01411	-0.01689	-0.10396
	hold	SN (R)	-0.09559	-0.19841	-0.91393
	setup	SN (R)	0.11867	0.25317	5.29812
sky130_osu_sc_18T_hs__dffsr_l	recovery	CK (R)	0.09602	0.15845	14.14120
	removal	CK (R)	-0.01411	-0.01689	-0.10396
	hold	SN (R)	-0.09465	-0.19208	-0.90222
	setup	SN (R)	0.11860	0.24970	5.24458

Constraints(ns) for RN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	recovery	CK (R)	0.09608	0.15862	5.82940
	removal	CK (R)	-0.01411	-0.01689	-0.10396
	hold	SN (R)	-0.09559	-0.19841	-0.93111
	hold	SN (R)	-0.09642	-0.20052	-0.91393
	setup	SN (R)	0.11867	0.25272	5.11012
	setup	SN (R)	0.11774	0.25317	5.29812
sky130_osu_sc_18T_hs__dffsr_l	recovery	CK (R)	0.09602	0.15845	14.14120
	removal	CK (R)	-0.01411	-0.01689	-0.10396
	hold	SN (R)	-0.09668	-0.19208	-0.92828
	hold	SN (R)	-0.09465	-0.19419	-0.90222
	setup	SN (R)	0.11860	0.24613	5.13690
	setup	SN (R)	0.11233	0.24970	5.24458

Constraints(ns) for RN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	min_pulse_width	RN ()	0.09010	0.51392	13.33370
	min_pulse_width	RN ()	0.09010	0.51392	13.33370
sky130_osu_sc_18T_hs__dffsr_l	min_pulse_width	RN ()	0.09010	0.51392	13.33370
	min_pulse_width	RN ()	0.08625	0.51392	13.33370

Constraints(ns) for SN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	recovery	CK (R)	0.03400	0.07584	3.77845
	removal	CK (R)	-0.01723	-0.04433	-0.29526
sky130_osu_sc_18T_hs__dffsr_l	recovery	CK (R)	0.03389	0.07466	3.72808
	removal	CK (R)	-0.01723	-0.04433	-0.29526

Constraints(ns) for SN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	recovery	CK (R)	0.03400	0.07584	3.77845
	removal	CK (R)	-0.01723	-0.04433	-0.29526
sky130_osu_sc_18T_hs__dffsr_l	recovery	CK (R)	0.03389	0.07466	3.72808
	removal	CK (R)	-0.01723	-0.04433	-0.29526

Constraints(ns) for SN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	min_pulse_width	SN ()	0.10166	0.51392	13.33370
	min_pulse_width	SN ()	0.09781	0.51392	13.33370
sky130_osu_sc_18T_hs__dffsr_l	min_pulse_width	SN ()	0.10166	0.51392	13.33370
	min_pulse_width	SN ()	0.09396	0.51392	13.33370

Constraints(ns) for CK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	min_pulse_width	CK ()	0.09010	0.51392	13.33370
	min_pulse_width	CK ()	0.10551	0.51392	13.33370
sky130_osu_sc_18T_hs__dffsr_l	min_pulse_width	CK ()	0.08625	0.51392	13.33370
	min_pulse_width	CK ()	0.10551	0.51392	13.33370

Constraints(ns) for CK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	min_pulse_width	CK ()	0.17487	0.51392	13.33370
	min_pulse_width	CK ()	0.09010	0.51392	13.33370
sky130_osu_sc_18T_hs__dffsr_l	min_pulse_width	CK ()	0.17101	0.51392	13.33370
	min_pulse_width	CK ()	0.08625	0.51392	13.33370

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.10504	0.13620	0.55372
	RN	0.12392	0.14843	0.54260
	SN	-0.00204	-0.18434	-3.71390
	SN	0.09119	0.11574	0.46597
sky130_osu_sc_18T_hs__dffsr_l	CK	0.00000	0.00000	0.00000
	CK	0.09493	0.12498	0.52157
	RN	0.11396	0.13741	0.50764
	SN	-0.00204	-0.15040	-2.64575
	SN	0.08042	0.10393	0.43262

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.12444	0.14234	0.43058
	RN	-0.00204	-0.18434	-3.71388
	RN	0.12866	0.15062	0.49664
sky130_osu_sc_18T_hs__dffsr_l	CK	0.00000	0.00000	0.00000
	CK	0.10987	0.13021	0.46056
	RN	-0.00204	-0.15041	-2.64571
	RN	0.11482	0.13908	0.53017

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.09716	0.11506	0.40356
	RN	-0.00204	-0.18334	-3.67353
	RN	0.10642	0.12840	0.47354
sky130_osu_sc_18T_hs__dffsr_l	CK	0.00000	0.00000	0.00000
	CK	0.09116	0.11149	0.44164
	RN	-0.00204	-0.14929	-2.61120
	RN	0.09999	0.12419	0.51034

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.08820	0.11930	0.53701
	RN	0.10721	0.13178	0.52390
	SN	-0.00204	-0.18334	-3.68002
	SN	0.08064	0.10537	0.45412
sky130_osu_sc_18T_hs__dffsr_l	CK	0.00000	0.00000	0.00000
	CK	0.07461	0.10464	0.50057
	RN	0.09370	0.11723	0.48820
	SN	-0.00204	-0.14929	-2.61271
	SN	0.06864	0.09220	0.41988

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.04426	0.04425	0.04425
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.06538	0.09591	0.63578
	(!CK * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * RN * !SN * Q * !QN)	0.04397	0.07199	0.55062
	(!CK * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * SN * !Q * QN)	0.04779	0.07518	0.54539
	(!CK * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !SN * !Q * QN)	0.05699	0.08469	0.55835
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.03932	0.03932	0.03932
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.06045	0.09098	0.63085
	(!CK * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * RN * !SN * Q * !QN)	0.03904	0.06707	0.54568
	(!CK * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * SN * !Q * QN)	0.04286	0.07025	0.54046
	(!CK * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !SN * !Q * QN)	0.05205	0.07976	0.55343

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.05684	0.05670	0.05661
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.08261	0.11407	0.64798
	(!CK * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * RN * !SN * Q * !QN)	0.04449	0.07464	0.55940
	(!CK * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * SN * !Q * QN)	0.03199	0.06240	0.55501
	(!CK * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !SN * !Q * QN)	0.04846	0.07889	0.56710
sky130_osu_sc_18T_hs__dffsr_1	CK	0.00000	0.00000	0.00000
	CK	0.05191	0.05177	0.05167
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * RN * SN * Q * !QN) + (!CK * RN * SN * !Q * QN)	0.07767	0.10912	0.64303
	(!CK * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * RN * !SN * Q * !QN)	0.03955	0.06970	0.55445
	(!CK * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * SN * !Q * QN)	0.02704	0.05746	0.55007
	(!CK * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * !RN * !SN * !Q * QN)	0.04352	0.07395	0.56216

Passive power(pJ) for RN rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.05798	0.10078	0.74854
	(!CK * D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * SN * !Q * QN)	0.06058	0.10806	0.84415
sky130_osu_sc_18T_hs__dffsr_l	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.05305	0.09584	0.74362
	(!CK * D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * SN * !Q * QN)	0.05565	0.10313	0.83923

Passive power(pJ) for RN falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.03786	0.08513	0.75743
	(!CK * D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * SN * !Q * QN)	0.07267	0.12065	0.85201
sky130_osu_sc_18T_hs__dffsr_l	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * SN * !Q * QN) + (!CK * !D * SN * !Q * QN)	0.03291	0.08017	0.75249
	(!CK * D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * SN * !Q * QN)	0.06772	0.11570	0.84707

Passive power(pJ) for SN rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.02875	0.02862	0.02853
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.01324	0.01165	0.02420
	(!CK * D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !RN * !Q * QN)	0.02565	0.02483	0.03112
	(!CK * !D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * RN * Q * !QN)	0.05572	0.08177	0.54087
sky130_osu_sc_18T_hs__dffsr_l	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.02383	0.02370	0.02361
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.00833	0.00674	0.01929
	(!CK * D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !RN * !Q * QN)	0.02072	0.01991	0.02619
	(!CK * !D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * RN * Q * !QN)	0.05081	0.07685	0.53595

Passive power(pJ) for SN falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.05613	0.05619	0.05615
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.05487	0.05460	0.05114
	(!CK * D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !RN * !Q * QN)	0.05948	0.05936	0.05761
	(!CK * !D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * RN * Q * !QN)	0.05622	0.08299	0.56047
sky130_osu_sc_18T_hs__dffsr_l	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(CK * RN * Q * !QN) + (!CK * D * RN * Q * !QN)	0.05119	0.05125	0.05121
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(CK * !RN * !Q * QN) + (!CK * !D * !RN * !Q * QN)	0.04992	0.04965	0.04618
	(!CK * D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * D * !RN * !Q * QN)	0.05454	0.05442	0.05267
	(!CK * !D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * RN * Q * !QN)	0.05127	0.07806	0.55551

Passive power(pJ) for CK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffsr_1	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.04168	0.08425	0.73386
	(D * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * SN * !Q * QN)	0.03626	0.08223	0.82203
	(D * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !SN * !Q * QN)	0.05289	0.09866	0.83456
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.04842	0.09048	0.74189
	(!D * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q * !QN)	0.06066	0.13405	1.26373
sky130_osu_sc_18T_hs__dffsr_1	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.03675	0.07932	0.72888
	(D * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * SN * !Q * QN)	0.03132	0.07728	0.81709
	(D * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !SN * !Q * QN)	0.04794	0.09372	0.82961
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.04349	0.08555	0.73696
	(!D * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q * !QN)	0.05573	0.12912	1.25874

Passive power(pJ) for CK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_osu_sc_18T_hs__dffsr_1	**(D * RN * SN * !Q * QN)**	0.00000	0.00000	0.00000
	(D * RN * SN * !Q * QN)	0.09817	0.14639	1.05475
	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.05596	0.10234	0.76211
	(D * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * SN * !Q * QN)	0.08002	0.12585	0.84962
	(D * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !SN * !Q * QN)	0.08906	0.13521	0.86282
	(!D * RN * SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * SN * Q * !QN)	0.10348	0.18220	1.20325
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.06775	0.11314	0.77381
	(!D * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q * !QN)	0.05818	0.13846	1.29164
sky130_osu_sc_18T_hs__dffsr_l	**(D * RN * SN * !Q * QN)**	0.00000	0.00000	0.00000
	(D * RN * SN * !Q * QN)	0.09324	0.14146	1.04982
	(D * RN * Q * !QN)	0.00000	0.00000	0.00000
	(D * RN * Q * !QN)	0.05103	0.09740	0.75713
	(D * !RN * SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * SN * !Q * QN)	0.07509	0.12092	0.84469
	(D * !RN * !SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * !RN * !SN * !Q * QN)	0.08413	0.13028	0.85789
	(!D * RN * SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * SN * Q * !QN)	0.09853	0.17726	1.19823
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * RN * SN * !Q * QN) + (!D * !RN * !Q * QN)	0.06282	0.10821	0.76888
	(!D * RN * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q * !QN)	0.05323	0.13359	1.28663

SKY130_OSU_SC_18T_HS__DFFSx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT			OUTPUT	
D	SN	CK	Q	QN
0	1	R	0	1
1	1	R	1	0
x	0	x	1	0
x	1	x	IQ	IQN

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__dffs_1	57.87540
sky130_osu_sc_18T_hs__dffs_l	57.87540

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	SN	CK	Q	QN
sky130_osu_sc_18T_hs__dffs_1	0.00545	0.00933	0.01523	3.66131	3.61364
sky130_osu_sc_18T_hs__dffs_l	0.00545	0.00933	0.01523	2.75824	2.76000

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__dffs_1	0.00000	3679.70000	4784.72000
sky130_osu_sc_18T_hs__dffs_l	0.00000	3114.04000	4219.19000

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffs_1	CK->Q (RR)	0.14425	0.98550	15.35860
	QN->Q (FR)	0.02066	0.59384	9.92542
	SN->Q (FR)	0.10491	1.01717	16.12710
sky130_osu_sc_18T_hs__dffs_l	CK->Q (RR)	0.14455	1.09534	15.70820
	QN->Q (FR)	0.02266	0.66511	10.40690
	SN->Q (FR)	0.10556	1.12500	16.47880

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffs_1	CK->Q (RF)	0.19789	1.04460	15.69210
	QN->Q (RF)	0.02253	0.65144	11.09640
sky130_osu_sc_18T_hs__dffs_l	CK->Q (RF)	0.20165	1.14943	15.88260
	QN->Q (RF)	0.02240	0.64182	10.18480

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffs_1	CK->QN (RR)	0.17468	0.53941	6.06259
sky130_osu_sc_18T_hs__dffs_l	CK->QN (RR)	0.17744	0.60453	6.61705

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dffs_1	CK->QN (RF)	0.12435	0.54142	6.88551
	SN->QN (FF)	0.08489	0.57292	7.64927
sky130_osu_sc_18T_hs__dffs_l	CK->QN (RF)	0.12033	0.55462	6.51176
	SN->QN (FF)	0.08146	0.58338	7.26794

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	hold	CK (R)	-0.03821	-0.03377	0.10742
	setup	CK (R)	0.10746	0.14815	4.05905
sky130_osu_sc_18T_hs__dffs_l	hold	CK (R)	-0.04059	-0.03377	0.10679
	setup	CK (R)	0.10746	0.14856	3.93302

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	hold	CK (R)	-0.06971	-0.19660	3.11117
	setup	CK (R)	0.08973	0.21108	3.59346
sky130_osu_sc_18T_hs__dffs_l	hold	CK (R)	-0.06972	-0.19656	2.86702
	setup	CK (R)	0.08973	0.21108	3.59248

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	hold	CK (R)	-0.03821	-0.03377	0.10742
	setup	CK (R)	0.10746	0.14815	4.05905
sky130_osu_sc_18T_hs__dffs_l	hold	CK (R)	-0.04059	-0.03377	0.10679
	setup	CK (R)	0.10746	0.14856	3.93302

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	hold	CK (R)	-0.06971	-0.19660	3.11117
	setup	CK (R)	0.08973	0.21108	3.59346
sky130_osu_sc_18T_hs__dffs_l	hold	CK (R)	-0.06972	-0.19656	2.86702
	setup	CK (R)	0.08973	0.21108	3.59248

Constraints(ns) for SN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	recovery	CK (R)	0.02800	0.06310	3.17003
	removal	CK (R)	-0.01377	-0.03799	-0.26578
sky130_osu_sc_18T_hs__dffs_l	recovery	CK (R)	0.02723	0.06265	3.16912
	removal	CK (R)	-0.01377	-0.03799	-0.26578

Constraints(ns) for SN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	recovery	CK (R)	0.02800	0.06310	3.17003
	removal	CK (R)	-0.01377	-0.03799	-0.26578
sky130_osu_sc_18T_hs__dffs_l	recovery	CK (R)	0.02723	0.06265	3.16912
	removal	CK (R)	-0.01377	-0.03799	-0.26578

Constraints(ns) for SN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	min_pulse_width	SN ()	0.07469	0.51392	13.33370
	min_pulse_width	SN ()	0.07469	0.51392	13.33370
sky130_osu_sc_18T_hs__dffs_l	min_pulse_width	SN ()	0.07469	0.51392	13.33370
	min_pulse_width	SN ()	0.07084	0.51392	13.33370

Constraints(ns) for CK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	min_pulse_width	CK ()	0.07084	0.51392	13.33370
	min_pulse_width	CK ()	0.10166	0.51392	13.33370
sky130_osu_sc_18T_hs__dffs_l	min_pulse_width	CK ()	0.07084	0.51392	13.33370
	min_pulse_width	CK ()	0.09781	0.51392	13.33370

Constraints(ns) for CK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dffs_1	min_pulse_width	CK ()	0.14790	0.51392	13.33370
	min_pulse_width	CK ()	0.07854	0.51392	13.33370
sky130_osu_sc_18T_hs__dffs_l	min_pulse_width	CK ()	0.14790	0.51392	13.33370
	min_pulse_width	CK ()	0.07854	0.51392	13.33370

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	CK	0.00000	0.00000	0.00000
	CK	0.07964	0.10875	0.47129
	SN	-0.00204	-0.17725	-3.47911
	SN	0.06394	0.08475	0.34955
sky130_osu_sc_18T_hs__dffs_l	CK	0.00000	0.00000	0.00000
	CK	0.06884	0.09936	0.49243
	SN	-0.00204	-0.14957	-2.62143
	SN	0.05253	0.07496	0.36950

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	CK	0.00000	0.00000	0.00000
	CK	0.10288	0.12077	0.40176
sky130_osu_sc_18T_hs__dffs_l	CK	0.00000	0.00000	0.00000
	CK	0.08829	0.10909	0.44225

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	CK	0.00000	0.00000	0.00000
	CK	0.07994	0.09769	0.37826
sky130_osu_sc_18T_hs__dffs_l	CK	0.00000	0.00000	0.00000
	CK	0.07404	0.09482	0.42745

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	CK	0.00000	0.00000	0.00000
	CK	0.06671	0.09586	0.45982
	SN	-0.00204	-0.17586	-3.43311
	SN	0.05735	0.07840	0.34233
sky130_osu_sc_18T_hs__dffs_l	CK	0.00000	0.00000	0.00000
	CK	0.05473	0.08537	0.47789
	SN	-0.00204	-0.14963	-2.62272
	SN	0.04661	0.06904	0.36221

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	CK	0.00000	0.00000	0.00000
	CK	0.03517	0.03516	0.03517
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.04859	0.08084	0.61761
	(!CK * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !SN * Q * !QN)	0.03220	0.06078	0.54107
sky130_osu_sc_18T_hs__dffs_l	CK	0.00000	0.00000	0.00000
	CK	0.03024	0.03024	0.03024
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.04366	0.07592	0.61268
	(!CK * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !SN * Q * !QN)	0.02728	0.05586	0.53613

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	CK	0.00000	0.00000	0.00000
	CK	0.04791	0.04775	0.04766
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.06713	0.09934	0.62865
	(!CK * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !SN * Q * !QN)	0.03348	0.06422	0.55066
sky130_osu_sc_18T_hs__dffs_l	CK	0.00000	0.00000	0.00000
	CK	0.04298	0.04283	0.04273
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * SN * Q * !QN) + (!CK * SN * !Q * QN)	0.06220	0.09441	0.62371
	(!CK * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !SN * Q * !QN)	0.02856	0.05930	0.54573

Passive power(pJ) for SN rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.00000	0.00000	0.00000
	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.02173	0.02164	0.02160
	(!CK * !D * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * Q * !QN)	0.04350	0.06492	0.44013
sky130_osu_sc_18T_hs__dffs_l	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.00000	0.00000	0.00000
	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.01682	0.01673	0.01669
	(!CK * !D * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * Q * !QN)	0.03858	0.06001	0.43522

Passive power(pJ) for SN falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.00000	0.00000	0.00000
	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.04265	0.04264	0.04253
	(!CK * !D * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * Q * !QN)	0.03718	0.06169	0.45538
sky130_osu_sc_18T_hs__dffs_l	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.00000	0.00000	0.00000
	(CK * Q * !QN) + (!CK * D * Q * !QN)	0.03772	0.03771	0.03760
	(!CK * !D * Q * !QN)	0.00000	0.00000	0.00000
	(!CK * !D * Q * !QN)	0.03225	0.05677	0.45045

Passive power(pJ) for CK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.03134	0.07402	0.72430
	(!D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * SN * !Q * QN)	0.03937	0.08154	0.73374
	(!D * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * !SN * Q * !QN)	0.04882	0.12318	1.25655
sky130_osu_sc_18T_hs__dffs_l	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.02642	0.06910	0.71933
	(!D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * SN * !Q * QN)	0.03445	0.07661	0.72880
	(!D * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * !SN * Q * !QN)	0.04390	0.11825	1.25157

Passive power(pJ) for CK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dffs_1	(D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * SN * !Q * QN)	0.08149	0.13069	1.04471
	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.04560	0.09206	0.75252
	(!D * SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * SN * Q * !QN)	0.08727	0.16623	1.18223
	(!D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * SN * !Q * QN)	0.05867	0.10415	0.76560
	(!D * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * !SN * Q * !QN)	0.04704	0.12823	1.28507
sky130_osu_sc_18T_hs__dffs_l	(D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(D * SN * !Q * QN)	0.07656	0.12576	1.03978
	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.04067	0.08713	0.74754
	(!D * SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * SN * Q * !QN)	0.08235	0.16129	1.17723
	(!D * SN * !Q * QN)	0.00000	0.00000	0.00000
	(!D * SN * !Q * QN)	0.05374	0.09922	0.76067
	(!D * !SN * Q * !QN)	0.00000	0.00000	0.00000
	(!D * !SN * Q * !QN)	0.04212	0.12331	1.28009

SKY130_OSU_SC_18T_HS__DFFx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT	
D	CK	Q	QN
0	R	0	1
1	R	1	0
x	x	IQ	IQN

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__dff_1	48.35160
sky130_osu_sc_18T_hs__dff_l	48.35160

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CK	Q	QN
sky130_osu_sc_18T_hs__dff_1	0.00561	0.01521	3.94247	3.88095
sky130_osu_sc_18T_hs__dff_l	0.00561	0.01521	2.74279	2.70064

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__dff_1	0.00000	3888.19000	4783.46000
sky130_osu_sc_18T_hs__dff_l	0.00000	3321.76000	4217.24000

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dff_1	CK->Q (RR)	0.12791	0.97382	15.93240
	QN->Q (FR)	0.01961	0.58356	9.94310
sky130_osu_sc_18T_hs__dff_l	CK->Q (RR)	0.13222	1.08445	15.69310
	QN->Q (FR)	0.02313	0.67689	10.59070

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dff_1	CK->Q (RF)	0.17199	1.01268	16.12340
	QN->Q (RF)	0.02090	0.62257	10.85140
sky130_osu_sc_18T_hs__dff_l	CK->Q (RF)	0.17913	1.12580	15.89560
	QN->Q (RF)	0.02246	0.64013	10.15410

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dff_1	CK->QN (RR)	0.15021	0.50831	6.20477
sky130_osu_sc_18T_hs__dff_l	CK->QN (RR)	0.15529	0.57826	6.56459

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__dff_1	CK->QN (RF)	0.10870	0.52203	7.03130
sky130_osu_sc_18T_hs__dff_l	CK->QN (RF)	0.10810	0.53491	6.33227

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dff_1	hold	CK (R)	-0.03234	-0.02744	0.11383
	setup	CK (R)	0.08930	0.13709	3.64804
sky130_osu_sc_18T_hs__dff_l	hold	CK (R)	-0.03633	-0.02744	0.11414
	setup	CK (R)	0.08829	0.13509	3.65232

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dff_1	hold	CK (R)	-0.06267	-0.19463	2.77771
	setup	CK (R)	0.07679	0.21108	3.58453
sky130_osu_sc_18T_hs__dff_l	hold	CK (R)	-0.06162	-0.19493	2.74126
	setup	CK (R)	0.07679	0.21108	3.58560

Constraints(ns) for CK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dff_1	min_pulse_width	CK ()	0.06313	0.51392	13.33370
	min_pulse_width	CK ()	0.09010	0.51392	13.33370
sky130_osu_sc_18T_hs__dff_l	min_pulse_width	CK ()	0.06313	0.51392	13.33370
	min_pulse_width	CK ()	0.09010	0.51392	13.33370

Constraints(ns) for CK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_osu_sc_18T_hs__dff_1	**min_pulse_width**	**CK ()**	0.12863	0.51392	13.33370
	min_pulse_width	**CK ()**	0.05928	0.51392	13.33370
sky130_osu_sc_18T_hs__dff_l	**min_pulse_width**	**CK ()**	0.12863	0.51392	13.33370
	min_pulse_width	**CK ()**	0.05928	0.51392	13.33370

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	CK	0.00000	0.00000	0.00000
	CK	0.08053	0.11414	0.54198
sky130_osu_sc_18T_hs__dff_l	CK	0.00000	0.00000	0.00000
	CK	0.07006	0.10243	0.50790

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	CK	0.00000	0.00000	0.00000
	CK	0.10273	0.12204	0.41596
sky130_osu_sc_18T_hs__dff_l	CK	0.00000	0.00000	0.00000
	CK	0.08815	0.10924	0.43756

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	CK	0.00000	0.00000	0.00000
	CK	0.08005	0.09942	0.39455
sky130_osu_sc_18T_hs__dff_l	CK	0.00000	0.00000	0.00000
	CK	0.07395	0.09499	0.42338

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	CK	0.00000	0.00000	0.00000
	CK	0.06757	0.10128	0.53043
sky130_osu_sc_18T_hs__dff_l	CK	0.00000	0.00000	0.00000
	CK	0.05485	0.08722	0.49210

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	CK	0.00000	0.00000	0.00000
	CK	0.02773	0.02716	0.03400
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.04727	0.08126	0.63903
sky130_osu_sc_18T_hs__dff_l	CK	0.00000	0.00000	0.00000
	CK	0.02280	0.02223	0.02907
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.04235	0.07633	0.63410

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	CK	0.00000	0.00000	0.00000
	CK	0.04787	0.04770	0.04599
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.06790	0.10097	0.65393
sky130_osu_sc_18T_hs__dff_l	CK	0.00000	0.00000	0.00000
	CK	0.04294	0.04277	0.04106
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.00000	0.00000	0.00000
	(!CK * Q * !QN) + (!CK * !Q * QN)	0.06297	0.09604	0.64900

Passive power(pJ) for CK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.03130	0.07399	0.72408
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.03892	0.08112	0.73328
sky130_osu_sc_18T_hs__dff_l	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.02637	0.06906	0.71911
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.03399	0.07619	0.72835

Passive power(pJ) for CK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__dff_1	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.04549	0.09196	0.75221
	(D * !Q * QN)	0.00000	0.00000	0.00000
	(D * !Q * QN)	0.08046	0.13056	1.06723
	(!D * Q * !QN)	0.00000	0.00000	0.00000
	(!D * Q * !QN)	0.08806	0.16953	1.20826
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.05812	0.10361	0.76502
sky130_osu_sc_18T_hs__dff_l	(D * Q * !QN)	0.00000	0.00000	0.00000
	(D * Q * !QN)	0.04056	0.08702	0.74723
	(D * !Q * QN)	0.00000	0.00000	0.00000
	(D * !Q * QN)	0.07553	0.12563	1.06252
	(!D * Q * !QN)	0.00000	0.00000	0.00000
	(!D * Q * !QN)	0.08314	0.16453	1.20327
	(!D * !Q * QN)	0.00000	0.00000	0.00000
	(!D * !Q * QN)	0.05319	0.09867	0.76008

SKY130_OSU_SC_18T_HS__INVx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__inv_1	6.59340
sky130_osu_sc_18T_hs__inv_10	32.96700
sky130_osu_sc_18T_hs__inv_2	9.52380
sky130_osu_sc_18T_hs__inv_3	12.45420
sky130_osu_sc_18T_hs__inv_4	15.38460
sky130_osu_sc_18T_hs__inv_6	21.24540
sky130_osu_sc_18T_hs__inv_8	27.10620
sky130_osu_sc_18T_hs__inv_l	6.59340

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_osu_sc_18T_hs__inv_1	0.00536	3.74650
sky130_osu_sc_18T_hs__inv_10	0.05055	31.33768
sky130_osu_sc_18T_hs__inv_2	0.01030	6.87510
sky130_osu_sc_18T_hs__inv_3	0.01536	10.03660
sky130_osu_sc_18T_hs__inv_4	0.02034	13.28756
sky130_osu_sc_18T_hs__inv_6	0.03050	19.64739
sky130_osu_sc_18T_hs__inv_8	0.04053	25.87937
sky130_osu_sc_18T_hs__inv_l	0.00422	2.46346

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__inv_1	0.00000	587.95600	1166.79000
sky130_osu_sc_18T_hs__inv_10	0.00000	5866.41000	11642.50000
sky130_osu_sc_18T_hs__inv_2	0.00000	1175.21000	2332.36000
sky130_osu_sc_18T_hs__inv_3	0.00000	1761.67000	3496.17000
sky130_osu_sc_18T_hs__inv_4	0.00000	2348.95000	4661.79000
sky130_osu_sc_18T_hs__inv_6	0.00000	3522.27000	6990.37000
sky130_osu_sc_18T_hs__inv_8	0.00000	4695.27000	9318.32000
sky130_osu_sc_18T_hs__inv_l	0.00000	305.00900	598.20800

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__inv_1	**A->Y (FR)**	0.01826	0.51718	8.74926
sky130_osu_sc_18T_hs__inv_10	**A->Y (FR)**	0.03127	0.32112	8.51513
sky130_osu_sc_18T_hs__inv_2	**A->Y (FR)**	0.01558	0.42402	8.38132
sky130_osu_sc_18T_hs__inv_3	**A->Y (FR)**	0.01747	0.39431	8.51161
sky130_osu_sc_18T_hs__inv_4	**A->Y (FR)**	0.01824	0.36567	8.41401
sky130_osu_sc_18T_hs__inv_6	**A->Y (FR)**	0.02141	0.34001	8.46625
sky130_osu_sc_18T_hs__inv_8	**A->Y (FR)**	0.02591	0.32632	8.49805
sky130_osu_sc_18T_hs__inv_l	**A->Y (FR)**	0.02134	0.59302	8.97083

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__inv_1	**A->Y (RF)**	0.01905	0.54283	9.34732
sky130_osu_sc_18T_hs__inv_10	**A->Y (RF)**	0.03420	0.30901	8.63322
sky130_osu_sc_18T_hs__inv_2	**A->Y (RF)**	0.01640	0.43709	8.85574
sky130_osu_sc_18T_hs__inv_3	**A->Y (RF)**	0.01825	0.40152	8.93744
sky130_osu_sc_18T_hs__inv_4	**A->Y (RF)**	0.01874	0.37080	8.84787
sky130_osu_sc_18T_hs__inv_6	**A->Y (RF)**	0.02359	0.34018	8.84165
sky130_osu_sc_18T_hs__inv_8	**A->Y (RF)**	0.02856	0.32252	8.81255
sky130_osu_sc_18T_hs__inv_l	**A->Y (RF)**	0.02018	0.54153	8.33010

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__inv_1	A	0.00000	0.00000	0.00000
	A	0.00890	0.02875	0.22385
sky130_osu_sc_18T_hs__inv_10	A	0.00000	0.00000	0.00000
	A	0.09287	0.35275	2.17428
sky130_osu_sc_18T_hs__inv_2	A	0.00000	0.00000	0.00000
	A	0.01638	0.06095	0.44813
sky130_osu_sc_18T_hs__inv_3	A	0.00000	0.00000	0.00000
	A	0.02504	0.09369	0.65683
sky130_osu_sc_18T_hs__inv_4	A	0.00000	0.00000	0.00000
	A	0.03264	0.12997	0.87673
sky130_osu_sc_18T_hs__inv_6	A	0.00000	0.00000	0.00000
	A	0.05019	0.20390	1.30463
sky130_osu_sc_18T_hs__inv_8	A	0.00000	0.00000	0.00000
	A	0.06992	0.27814	1.73198
sky130_osu_sc_18T_hs__inv_l	A	0.00000	0.00000	0.00000
	A	0.00705	0.01934	0.15327

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__inv_1	**A**	0.00000	0.00000	0.00000
	A	0.03061	0.04315	0.15740
sky130_osu_sc_18T_hs__inv_10	**A**	0.00000	0.00000	0.00000
	A	0.30748	0.48781	1.57153
sky130_osu_sc_18T_hs__inv_2	**A**	0.00000	0.00000	0.00000
	A	0.05695	0.08688	0.31867
sky130_osu_sc_18T_hs__inv_3	**A**	0.00000	0.00000	0.00000
	A	0.08758	0.13560	0.46997
sky130_osu_sc_18T_hs__inv_4	**A**	0.00000	0.00000	0.00000
	A	0.11591	0.18294	0.62975
sky130_osu_sc_18T_hs__inv_6	**A**	0.00000	0.00000	0.00000
	A	0.17506	0.28297	0.93916
sky130_osu_sc_18T_hs__inv_8	**A**	0.00000	0.00000	0.00000
	A	0.23992	0.38611	1.25035
sky130_osu_sc_18T_hs__inv_l	**A**	0.00000	0.00000	0.00000
	A	0.01372	0.02229	0.11055

SKY130_OSU_SC_18T_HS__MUX2

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT			OUTPUT
A0	**A1**	**S0**	**Y**
0	**0**	**x**	**0**
0	**1**	**0**	**0**
x	**1**	**1**	**1**
1	**x**	**0**	**1**
1	**0**	**1**	**0**

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__mux2_1	18.31500

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	**A1**	**S0**	**Y**
sky130_osu_sc_18T_hs__mux2_1	1.35045	1.35355	0.01089	1.50926

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_osu_sc_18T_hs__mux2_1	0.00000	1173.96000	1175.72000

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__mux2_1	A0->Y (RR)	-	0.00893	0.16614	2.19643
	A1->Y (RR)	-	0.00933	0.16593	2.19306
	S0->Y (RR)	(!A0 * A1)	0.03384	0.24185	2.55914
	S0->Y (FR)	(A0 * !A1)	0.02730	0.27870	3.39162

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__mux2_1	A0->Y (FF)	-	0.00783	0.17203	2.29813
	A1->Y (FF)	-	0.00790	0.17225	2.29943
	S0->Y (FF)	(!A0 * A1)	0.03882	0.28821	3.20636
	S0->Y (RF)	(A0 * !A1)	0.02424	0.27338	3.30547

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__mux2_1	A0	-	0.00000	0.00000	0.00000
	A0	-	-0.00895	-0.00899	-0.00898
	A1	-	0.00000	0.00000	0.00000
	A1	-	0.02311	0.02305	0.02306
	S0	(A0 * !A1)	0.00000	0.00000	0.00000
	S0	(A0 * !A1)	0.00933	0.05699	0.71317
	S0	(!A0 * A1)	0.00000	0.00000	0.00000
	S0	(!A0 * A1)	0.00940	0.05370	0.69979

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__mux2_1	A0	-	0.00000	0.00000	0.00000
	A0	-	0.00941	0.00942	0.00943
	A1	-	0.00000	0.00000	0.00000
	A1	-	0.03443	0.03444	0.03443
	S0	(A0 * !A1)	0.00000	0.00000	0.00000
	S0	(A0 * !A1)	0.02123	0.06714	0.71394
	S0	(!A0 * A1)	0.00000	0.00000	0.00000
	S0	(!A0 * A1)	0.02382	0.06984	0.72517

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__mux2_1	(A1 * S0 * Y) + (!A1 * S0 * !Y)	0.00000	0.00000	0.00000
	(A1 * S0 * Y) + (!A1 * S0 * !Y)	0.00796	0.00795	0.00796

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__mux2_1	(A1 * S0 * Y) + (!A1 * S0 * !Y)	0.00000	0.00000	0.00000
	(A1 * S0 * Y) + (!A1 * S0 * !Y)	0.01232	0.01232	0.01232

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__mux2_1	(A0 * !S0 * Y) + (!A0 * !S0 * !Y)	0.00000	0.00000	0.00000
	(A0 * !S0 * Y) + (!A0 * !S0 * !Y)	-0.00242	-0.00241	-0.00243

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__mux2_1	(A0 * !S0 * Y) + (!A0 * !S0 * !Y)	0.00000	0.00000	0.00000
	(A0 * !S0 * Y) + (!A0 * !S0 * !Y)	0.00257	0.00257	0.00257

Passive power(pJ) for S0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__mux2_1	(A0 * A1 * Y)	0.00000	0.00000	0.00000
	(A0 * A1 * Y)	0.00822	0.05378	0.69887
	(!A0 * !A1 * !Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * !Y)	0.00810	0.05366	0.69944

Passive power(pJ) for S0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__mux2_1	(A0 * A1 * Y)	0.00000	0.00000	0.00000
	(A0 * A1 * Y)	0.01780	0.06437	0.71889
	(!A0 * !A1 * !Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * !Y)	0.01553	0.06336	0.71824

SKY130_OSU_SC_18T_HS__NAND2x

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__nand2_1	9.52380
sky130_osu_sc_18T_hs__nand2_l	9.52380

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_osu_sc_18T_hs__nand2_1	0.00538	0.00537	2.52701
sky130_osu_sc_18T_hs__nand2_l	0.00423	0.00423	1.92514

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__nand2_1	0.00000	586.08200	2327.30000
sky130_osu_sc_18T_hs__nand2_l	0.00000	304.34400	1194.08000

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__nand2_1	A->Y (FR)	0.01863	0.44333	6.78626
	B->Y (FR)	0.02156	0.44257	6.71554
sky130_osu_sc_18T_hs__nand2_l	A->Y (FR)	0.02163	0.54187	7.70050
	B->Y (FR)	0.02551	0.54381	7.67516

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__nand2_1	A->Y (RF)	0.02563	0.58818	9.05178
	B->Y (RF)	0.02858	0.55005	8.50809
sky130_osu_sc_18T_hs__nand2_l	A->Y (RF)	0.02702	0.61535	8.85791
	B->Y (RF)	0.02964	0.57396	8.20971

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nand2_1	A	0.00000	0.00000	0.00000
	A	0.00942	0.02744	0.22718
	B	0.00000	0.00000	0.00000
	B	0.01190	0.03081	0.24510
sky130_osu_sc_18T_hs__nand2_1	A	0.00000	0.00000	0.00000
	A	0.00740	0.01830	0.14625
	B	0.00000	0.00000	0.00000
	B	0.00931	0.02050	0.15513

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nand2_1	A	0.00000	0.00000	0.00000
	A	0.06311	0.07378	0.18275
	B	0.00000	0.00000	0.00000
	B	0.06163	0.07137	0.18084
sky130_osu_sc_18T_hs__nand2_1	A	0.00000	0.00000	0.00000
	A	0.03171	0.03868	0.11692
	B	0.00000	0.00000	0.00000
	B	0.03090	0.03758	0.12022

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nand2_1	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	-0.00669	-0.00674	-0.00679
sky130_osu_sc_18T_hs__nand2_l	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	-0.00495	-0.00498	-0.00504

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nand2_1	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	0.00681	0.00685	0.00685
sky130_osu_sc_18T_hs__nand2_l	(!B * Y)	0.00000	0.00000	0.00000
	(!B * Y)	0.00509	0.00513	0.00511

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nand2_1	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	-0.00626	-0.00624	-0.00627
sky130_osu_sc_18T_hs__nand2_l	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	-0.00463	-0.00466	-0.00465

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nand2_1	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.00669	0.00656	0.00646
sky130_osu_sc_18T_hs__nand2_l	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.00502	0.00494	0.00487

SKY130_OSU_SC_18T_HS__NOR2x

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__nor2_1	9.52380
sky130_osu_sc_18T_hs__nor2_l	9.52380

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_osu_sc_18T_hs__nor2_1	0.00540	0.00568	2.17883
sky130_osu_sc_18T_hs__nor2_l	0.00417	0.00449	1.45231

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__nor2_1	0.00000	460.08100	1158.35000
sky130_osu_sc_18T_hs__nor2_l	0.00000	245.83500	594.49600

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__nor2_1	A->Y (FR)	0.03424	0.55807	8.15961
	B->Y (FR)	0.02486	0.58753	8.63811
sky130_osu_sc_18T_hs__nor2_l	A->Y (FR)	0.03986	0.64033	8.37081
	B->Y (FR)	0.03039	0.67373	8.92423

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__nor2_1	A->Y (RF)	0.02654	0.44284	6.41196
	B->Y (RF)	0.02053	0.43142	6.37148
sky130_osu_sc_18T_hs__nor2_l	A->Y (RF)	0.02670	0.44107	5.72165
	B->Y (RF)	0.02161	0.43172	5.68247

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nor2_1	A	0.00000	0.00000	0.00000
	A	0.01370	0.02785	0.21271
	B	0.00000	0.00000	0.00000
	B	0.00975	0.02810	0.24222
sky130_osu_sc_18T_hs__nor2_l	A	0.00000	0.00000	0.00000
	A	0.01051	0.01984	0.15804
	B	0.00000	0.00000	0.00000
	B	0.00778	0.01931	0.16734

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nor2_1	A	0.00000	0.00000	0.00000
	A	0.01387	0.02704	0.18055
	B	0.00000	0.00000	0.00000
	B	0.02245	0.03476	0.17397
sky130_osu_sc_18T_hs__nor2_l	A	0.00000	0.00000	0.00000
	A	0.00734	0.01632	0.13203
	B	0.00000	0.00000	0.00000
	B	0.01053	0.01896	0.12526

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nor2_1	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	-0.00391	-0.00442	0.00241
sky130_osu_sc_18T_hs__nor2_l	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	-0.00293	-0.00340	0.00004

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nor2_1	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	0.01634	0.01614	0.01446
sky130_osu_sc_18T_hs__nor2_l	(B * !Y)	0.00000	0.00000	0.00000
	(B * !Y)	0.00971	0.00962	0.00881

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nor2_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	-0.00210	-0.00210	-0.00107
sky130_osu_sc_18T_hs__nor2_l	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	-0.00162	-0.00162	-0.00113

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__nor2_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.00839	0.00819	0.00538
sky130_osu_sc_18T_hs__nor2_l	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.00511	0.00501	0.00353

SKY130_OSU_SC_18T_HS__OAI21

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT			OUTPUT
A0	A1	B0	Y
0	0	x	1
x	1	0	1
x	1	1	0
1	x	0	1
1	x	1	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__oai21_l	12.45420

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	B0	Y
sky130_osu_sc_18T_hs__oai21_l	0.00545	0.00558	0.00465	2.07812

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__oai21_l	0.00000	456.45600	1750.71000

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__oai21_l	A0->Y (FR)	0.03246	0.58083	8.34599
	A1->Y (FR)	0.04495	0.55614	7.89582
	B0->Y (FR)	0.02592	0.56020	8.04284

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__oai21_l	A0->Y (RF)	0.03596	0.53341	7.71268
	A1->Y (RF)	0.04505	0.53242	7.50355
	B0->Y (RF)	0.02832	0.58435	8.50049

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	A0	0.00000	0.00000	0.00000
	A0	0.01347	0.02788	0.20128
	A1	0.00000	0.00000	0.00000
	A1	0.01741	0.02906	0.18965
	B0	0.00804	0.02105	0.17459

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	A0	0.00000	0.00000	0.00000
	A0	0.04528	0.05318	0.15438
	A1	0.00000	0.00000	0.00000
	A1	0.03254	0.04095	0.15625
	B0	0.01642	0.02584	0.13364

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	0.00310	0.00311	0.00413
	(A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(A1 * !B0 * Y)	-0.00612	-0.00615	-0.00614
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	-0.00612	-0.00616	-0.00615

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	0.01359	0.01338	0.01058
	(A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(A1 * !B0 * Y)	0.00629	0.00633	0.00632
	(!A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * Y)	0.00663	0.00640	0.00633

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	(A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * !Y)	0.00143	0.00088	0.00767
	(A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(A0 * !B0 * Y)	-0.00609	-0.00612	-0.00608
	(!A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * Y)	-0.00607	-0.00612	-0.00609

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	(A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * !Y)	0.02140	0.02123	0.01954
	(A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(A0 * !B0 * Y)	0.00624	0.00630	0.00626
	(!A0 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * Y)	0.00657	0.00638	0.00628

Passive power(pJ) for B0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	(!A0 * !A1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * Y)	-0.00500	-0.00505	-0.00518

Passive power(pJ) for B0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai21_l	(!A0 * !A1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * Y)	0.00524	0.00528	0.00526

SKY130_OSU_SC_18T_HS__OAI22

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT				OUTPUT
A0	A1	B0	B1	Y
0	0	x	x	1
x	1	0	0	1
x	1	x	1	0
x	1	1	x	0
1	x	0	0	1
1	x	x	1	0
1	x	1	x	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__oai22_l	15.38460

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A0	A1	B0	B1	Y
sky130_osu_sc_18T_hs__oai22_l	0.00536	0.00556	0.00568	0.00558	2.06422

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__oai22_l	0.00000	688.18900	2309.53000

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__oai22_l	A0->Y (FR)	0.04772	0.55464	7.80525
	A1->Y (FR)	0.03802	0.58510	8.31331
	B0->Y (FR)	0.02742	0.57459	8.30454
	B1->Y (FR)	0.03697	0.54266	7.78897

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__oai22_l	A0->Y (RF)	0.06568	0.57532	7.87894
	A1->Y (RF)	0.05126	0.55265	7.73133
	B0->Y (RF)	0.04414	0.60539	8.53796
	B1->Y (RF)	0.05892	0.63924	8.84812

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	A0	0.02082	0.03247	0.19355
	A1	0.01686	0.03253	0.22478
	B0	0.01050	0.02628	0.21298
	B1	0.01461	0.02594	0.17824

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	A0	0.04773	0.05553	0.16572
	A1	0.05563	0.06340	0.16227
	B0	0.05756	0.06635	0.16619
	B1	0.01870	0.02852	0.15368

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	-0.00334	-0.00391	0.00292
	(A1 * !B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A1 * !B0 * B1 * !Y)	0.00140	0.00083	0.00765
	(A1 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(A1 * !B0 * !B1 * Y)	-0.00601	-0.00604	-0.00602
	(!A1 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * !B1 * Y)	-0.00601	-0.00605	-0.00603

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	0.01685	0.01671	0.01497
	(A1 * !B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A1 * !B0 * B1 * !Y)	0.02157	0.02143	0.01970
	(A1 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(A1 * !B0 * !B1 * Y)	0.00633	0.00639	0.00635
	(!A1 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A1 * !B0 * !B1 * Y)	0.00675	0.00642	0.00637

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * !Y)	-0.00156	-0.00156	-0.00054
	(A0 * !B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * !B0 * B1 * !Y)	0.00318	0.00318	0.00421
	(A0 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(A0 * !B0 * !B1 * Y)	-0.00599	-0.00602	-0.00600
	(!A0 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * !B1 * Y)	-0.00599	-0.00604	-0.00602

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A0 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * B0 * !Y)	0.00888	0.00869	0.00587
	(A0 * !B0 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * !B0 * B1 * !Y)	0.01362	0.01343	0.01062
	(A0 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(A0 * !B0 * !B1 * Y)	0.00631	0.00635	0.00634
	(!A0 * !B0 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !B0 * !B1 * Y)	0.00671	0.00645	0.00635

Passive power(pJ) for B0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A1 * B1 * !Y)	0.00000	0.00000	0.00000
	(A1 * B1 * !Y)	-0.00155	-0.00155	-0.00052
	(A0 * !A1 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * !A1 * B1 * !Y)	0.00319	0.00319	0.00422
	(!A0 * !A1 * B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * B1 * Y)	-0.00676	-0.00678	-0.00673
	(!A0 * !A1 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * !B1 * Y)	-0.00650	-0.00655	-0.00671

Passive power(pJ) for B0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A1 * B1 * !Y)	0.00000	0.00000	0.00000
	(A1 * B1 * !Y)	0.00887	0.00868	0.00586
	(A0 * !A1 * B1 * !Y)	0.00000	0.00000	0.00000
	(A0 * !A1 * B1 * !Y)	0.01361	0.01342	0.01060
	(!A0 * !A1 * B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * B1 * Y)	0.00704	0.00715	0.00697
	(!A0 * !A1 * !B1 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * !B1 * Y)	0.00678	0.00682	0.00680

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	-0.00330	-0.00383	0.00299
	(A0 * !A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * !A1 * B0 * !Y)	0.00143	0.00090	0.00772
	(!A0 * !A1 * B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * B0 * Y)	-0.00682	-0.00687	-0.00681
	(!A0 * !A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * !B0 * Y)	-0.00657	-0.00662	-0.00679

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__oai22_l	(A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A1 * B0 * !Y)	0.01677	0.01657	0.01490
	(A0 * !A1 * B0 * !Y)	0.00000	0.00000	0.00000
	(A0 * !A1 * B0 * !Y)	0.02149	0.02133	0.01963
	(!A0 * !A1 * B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * B0 * Y)	0.00714	0.00719	0.00706
	(!A0 * !A1 * !B0 * Y)	0.00000	0.00000	0.00000
	(!A0 * !A1 * !B0 * Y)	0.00686	0.00690	0.00689

SKY130_OSU_SC_18T_HS__OR2x

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__or2_1	12.45420
sky130_osu_sc_18T_hs__or2_2	15.38460
sky130_osu_sc_18T_hs__or2_4	21.24540
sky130_osu_sc_18T_hs__or2_8	32.96700
sky130_osu_sc_18T_hs__or2_l	12.45420

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_osu_sc_18T_hs__or2_1	0.00579	0.00555	3.96155
sky130_osu_sc_18T_hs__or2_2	0.00579	0.00555	7.54747
sky130_osu_sc_18T_hs__or2_4	0.00580	0.00556	14.58501
sky130_osu_sc_18T_hs__or2_8	0.00584	0.00560	27.06489
sky130_osu_sc_18T_hs__or2_l	0.00460	0.00434	2.65363

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__or2_1	0.00000	758.94300	1186.20000
sky130_osu_sc_18T_hs__or2_2	0.00000	1057.48000	2353.30000
sky130_osu_sc_18T_hs__or2_4	0.00000	1654.19000	4685.64000
sky130_osu_sc_18T_hs__or2_8	0.00000	2847.04000	9348.14000
sky130_osu_sc_18T_hs__or2_l	0.00000	404.39600	622.33300

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__or2_1	A->Y (RR)	0.05067	0.40313	6.24642
	B->Y (RR)	0.04242	0.37511	6.11052
sky130_osu_sc_18T_hs__or2_2	A->Y (RR)	0.05656	0.35585	6.15583
	B->Y (RR)	0.04784	0.32775	5.99530
sky130_osu_sc_18T_hs__or2_4	A->Y (RR)	0.07448	0.35539	6.33014
	B->Y (RR)	0.06511	0.32918	6.15984
sky130_osu_sc_18T_hs__or2_8	A->Y (RR)	0.11148	0.39491	6.38863
	B->Y (RR)	0.10155	0.37223	6.21111
sky130_osu_sc_18T_hs__or2_l	A->Y (RR)	0.05451	0.44353	6.02950
	B->Y (RR)	0.04698	0.41786	5.86521

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__or2_1	A->Y (FF)	0.06588	0.51810	8.17886
	B->Y (FF)	0.05331	0.53273	8.59831
sky130_osu_sc_18T_hs__or2_2	A->Y (FF)	0.07673	0.45870	7.99705
	B->Y (FF)	0.06403	0.47494	8.41652
sky130_osu_sc_18T_hs__or2_4	A->Y (FF)	0.10729	0.45439	8.08749
	B->Y (FF)	0.09457	0.47292	8.50049
sky130_osu_sc_18T_hs__or2_8	A->Y (FF)	0.17154	0.50045	7.86569
	B->Y (FF)	0.15884	0.52459	8.26890
sky130_osu_sc_18T_hs__or2_l	A->Y (FF)	0.07356	0.55737	7.54130
	B->Y (FF)	0.06023	0.57495	8.01459

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__or2_1	A	0.00000	0.00000	0.00000
	A	0.02601	0.05401	0.45722
	B	0.00000	0.00000	0.00000
	B	0.03734	0.06892	0.51479
sky130_osu_sc_18T_hs__or2_2	A	0.00000	0.00000	0.00000
	A	0.03510	0.06462	0.47581
	B	0.00000	0.00000	0.00000
	B	0.04582	0.07834	0.52800
sky130_osu_sc_18T_hs__or2_4	A	0.00000	0.00000	0.00000
	A	0.05784	0.08993	0.50719
	B	0.00000	0.00000	0.00000
	B	0.06760	0.10222	0.55360
sky130_osu_sc_18T_hs__or2_8	A	0.00000	0.00000	0.00000
	A	0.12724	0.15245	0.58413
	B	0.00000	0.00000	0.00000
	B	0.13487	0.16167	0.61956
sky130_osu_sc_18T_hs__or2_l	A	0.00000	0.00000	0.00000
	A	0.01623	0.03503	0.32225
	B	0.00000	0.00000	0.00000
	B	0.02120	0.04241	0.34685

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__or2_1	A	0.00000	0.00000	0.00000
	A	0.05422	0.08176	0.51134
	B	0.00000	0.00000	0.00000
	B	0.05026	0.08671	0.60856
sky130_osu_sc_18T_hs__or2_2	A	0.00000	0.00000	0.00000
	A	0.09528	0.11776	0.53624
	B	0.00000	0.00000	0.00000
	B	0.09170	0.12272	0.63328
sky130_osu_sc_18T_hs__or2_4	A	0.00000	0.00000	0.00000
	A	0.19343	0.19684	0.58338
	B	0.00000	0.00000	0.00000
	B	0.19024	0.20204	0.68215
sky130_osu_sc_18T_hs__or2_8	A	0.00000	0.00000	0.00000
	A	0.41646	0.36004	0.67848
	B	0.00000	0.00000	0.00000
	B	0.41434	0.36728	0.78122
sky130_osu_sc_18T_hs__or2_l	A	0.00000	0.00000	0.00000
	A	0.03248	0.05086	0.33737
	B	0.00000	0.00000	0.00000
	B	0.02956	0.05316	0.39938

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__or2_1	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	-0.00375	-0.00432	0.00248
sky130_osu_sc_18T_hs__or2_2	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	-0.00367	-0.00424	0.00256
sky130_osu_sc_18T_hs__or2_4	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	-0.00350	-0.00408	0.00272
sky130_osu_sc_18T_hs__or2_8	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	-0.00318	-0.00376	0.00305
sky130_osu_sc_18T_hs__or2_l	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	-0.00276	-0.00329	0.00014

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__or2_1	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	0.01644	0.01627	0.01456
sky130_osu_sc_18T_hs__or2_2	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	0.01652	0.01635	0.01463
sky130_osu_sc_18T_hs__or2_4	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	0.01668	0.01651	0.01479
sky130_osu_sc_18T_hs__or2_8	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	0.01698	0.01682	0.01509
sky130_osu_sc_18T_hs__or2_l	(B * Y)	0.00000	0.00000	0.00000
	(B * Y)	0.00984	0.00975	0.00892

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__or2_1	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	-0.00202	-0.00202	-0.00105
sky130_osu_sc_18T_hs__or2_2	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	-0.00194	-0.00194	-0.00097
sky130_osu_sc_18T_hs__or2_4	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	-0.00178	-0.00178	-0.00081
sky130_osu_sc_18T_hs__or2_8	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	-0.00146	-0.00146	-0.00049
sky130_osu_sc_18T_hs__or2_l	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	-0.00155	-0.00156	-0.00110

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__or2_1	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	0.00854	0.00833	0.00553
sky130_osu_sc_18T_hs__or2_2	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	0.00862	0.00841	0.00560
sky130_osu_sc_18T_hs__or2_4	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	0.00878	0.00856	0.00576
sky130_osu_sc_18T_hs__or2_8	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	0.00909	0.00887	0.00607
sky130_osu_sc_18T_hs__or2_l	(A * Y)	0.00000	0.00000	0.00000
	(A * Y)	0.00528	0.00518	0.00371

SKY130_OSU_SC_18T_HS__TBUFIx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	OE	Y
-	0	HiZ
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__tbufi_1	12.45420
sky130_osu_sc_18T_hs__tbufi_l	12.45420

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	OE	Y
sky130_osu_sc_18T_hs__tbufi_1	0.00568	0.00719	2.18247
sky130_osu_sc_18T_hs__tbufi_l	0.00450	0.00571	1.45754

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__tbufi_1	0.00000	591.50300	2320.91000
sky130_osu_sc_18T_hs__tbufi_l	0.00000	311.90900	1191.26000

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__tbufi_1	A->Y (FR)	0.02443	0.57856	8.53296
	OE->Y (FR)	0.03563	0.39580	5.34324
	OE->Y (RR)	0.05171	0.46576	6.30747
sky130_osu_sc_18T_hs__tbufi_l	A->Y (FR)	0.02988	0.66884	8.85616
	OE->Y (FR)	0.03907	0.39562	5.34307
	OE->Y (RR)	0.05760	0.51724	6.00176

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__tbufi_1	A->Y (RF)	0.02574	0.55074	8.12431
	OE->Y (FF)	0.03602	0.39581	5.34324
	OE->Y (RF)	0.02271	0.48371	7.27948
sky130_osu_sc_18T_hs__tbufi_l	A->Y (RF)	0.02726	0.54927	7.24574
	OE->Y (FF)	0.03962	0.39561	5.34306
	OE->Y (RF)	0.02450	0.47933	6.29085

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tbufi_1	A	0.00000	0.00000	0.00000
	A	0.04121	0.05602	0.22488
	OE	0.00000	0.00000	0.00000
	OE	0.03928	0.07985	0.65731
sky130_osu_sc_18T_hs__tbufi_l	A	0.00000	0.00000	0.00000
	A	0.02370	0.03325	0.15358
	OE	0.00000	0.00000	0.00000
	OE	0.02248	0.04984	0.44261

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tbufi_1	A	0.00000	0.00000	0.00000
	A	0.05738	0.06725	0.17721
	OE	0.00000	0.00000	0.00000
	OE	0.06340	0.10698	0.73435
sky130_osu_sc_18T_hs__tbufi_l	A	0.00000	0.00000	0.00000
	A	0.02670	0.03356	0.11903
	OE	0.00000	0.00000	0.00000
	OE	0.03115	0.05984	0.47534

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tbufi_1	(!OE * Y)	0.00000	0.00000	0.00000
	(!OE * Y)	-0.00491	-0.00495	-0.00481
	(!OE * !Y)	0.00000	0.00000	0.00000
	(!OE * !Y)	-0.00362	-0.00365	-0.00335
sky130_osu_sc_18T_hs__tbufi_l	(!OE * Y)	0.00000	0.00000	0.00000
	(!OE * Y)	-0.00367	-0.00370	-0.00360
	(!OE * !Y)	0.00000	0.00000	0.00000
	(!OE * !Y)	-0.00278	-0.00280	-0.00256

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tbufi_1	(!OE * Y)	0.00000	0.00000	0.00000
	(!OE * Y)	0.00522	0.00525	0.00493
	(!OE * !Y)	0.00000	0.00000	0.00000
	(!OE * !Y)	0.00553	0.00555	0.00507
sky130_osu_sc_18T_hs__tbufi_l	(!OE * Y)	0.00000	0.00000	0.00000
	(!OE * Y)	0.00401	0.00402	0.00383
	(!OE * !Y)	0.00000	0.00000	0.00000
	(!OE * !Y)	0.00430	0.00431	0.00397

Passive power(pJ) for OE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tbufi_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.02468	0.07030	0.72175
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.01423	0.06032	0.71629
sky130_osu_sc_18T_hs__tbufi_l	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.01352	0.04362	0.47490
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.00811	0.03835	0.47188

Passive power(pJ) for OE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tbufi_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.01129	0.05956	0.72831
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.01023	0.05838	0.72299
sky130_osu_sc_18T_hs__tbufi_l	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.00894	0.04022	0.48021
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.00823	0.03949	0.47731

SKY130_OSU_SC_18T_HS__TNBUFIx

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	OE	Y
0	0	1
1	0	0
-	1	HiZ

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__tnbufi_1	12.45420
sky130_osu_sc_18T_hs__tnbufi_l	12.45420

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	OE	Y
sky130_osu_sc_18T_hs__tnbufi_1	0.00567	0.00896	2.18158
sky130_osu_sc_18T_hs__tnbufi_l	0.00449	0.00687	1.45880

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__tnbufi_1	0.00000	977.97700	1173.84000
sky130_osu_sc_18T_hs__tnbufi_l	0.00000	507.61000	608.14600

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__tnbufi_1	A->Y (FR)	0.02438	0.57835	8.52785
	OE->Y (RR)	0.02540	0.39732	5.34479
	OE->Y (FR)	0.03265	0.52294	7.71149
sky130_osu_sc_18T_hs__tnbufi_l	A->Y (FR)	0.02990	0.66836	8.86037
	OE->Y (RR)	0.02563	0.39777	5.34530
	OE->Y (FR)	0.03848	0.60771	7.87039

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_osu_sc_18T_hs__tnbufi_1	A->Y (RF)	0.02545	0.55062	8.12314
	OE->Y (RF)	0.02512	0.39734	5.34473
	OE->Y (FF)	0.03752	0.44434	6.24406
sky130_osu_sc_18T_hs__tnbufi_l	A->Y (RF)	0.02694	0.54937	7.25123
	OE->Y (RF)	0.02537	0.39777	5.34516
	OE->Y (FF)	0.04156	0.47739	5.72260

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tnbufi_1	A	0.00000	0.00000	0.00000
	A	0.00956	0.02469	0.19828
	OE	0.00000	0.00000	0.00000
	OE	0.02372	0.07222	0.72408
sky130_osu_sc_18T_hs__tnbufi_l	A	0.00000	0.00000	0.00000
	A	0.00771	0.01737	0.14011
	OE	0.00000	0.00000	0.00000
	OE	0.01817	0.04983	0.48155

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tnbufi_1	A	0.00000	0.00000	0.00000
	A	0.02783	0.03778	0.14860
	OE	0.00000	0.00000	0.00000
	OE	0.04676	0.09209	0.69061
sky130_osu_sc_18T_hs__tnbufi_l	A	0.00000	0.00000	0.00000
	A	0.01282	0.01974	0.10561
	OE	0.00000	0.00000	0.00000
	OE	0.02760	0.05652	0.44036

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tnbufi_1	(OE * Y)	0.00000	0.00000	0.00000
	(OE * Y)	0.00582	0.00578	0.00598
	(OE * !Y)	0.00000	0.00000	0.00000
	(OE * !Y)	0.00712	0.00710	0.00738
sky130_osu_sc_18T_hs__tnbufi_l	(OE * Y)	0.00000	0.00000	0.00000
	(OE * Y)	0.00206	0.00203	0.00218
	(OE * !Y)	0.00000	0.00000	0.00000
	(OE * !Y)	0.00296	0.00293	0.00316

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tnbufi_1	(OE * Y)	0.00000	0.00000	0.00000
	(OE * Y)	0.01465	0.01467	0.01434
	(OE * !Y)	0.00000	0.00000	0.00000
	(OE * !Y)	0.01501	0.01501	0.01451
sky130_osu_sc_18T_hs__tnbufi_l	(OE * Y)	0.00000	0.00000	0.00000
	(OE * Y)	0.00849	0.00850	0.00831
	(OE * !Y)	0.00000	0.00000	0.00000
	(OE * !Y)	0.00881	0.00881	0.00847

Passive power(pJ) for OE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tnbufi_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.00380	0.05149	0.71215
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.00251	0.05029	0.70617
sky130_osu_sc_18T_hs__tnbufi_l	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.00064	0.03193	0.46790
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	-0.00024	0.03103	0.46472

Passive power(pJ) for OE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_osu_sc_18T_hs__tnbufi_1	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.02805	0.07781	0.73974
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.01762	0.06816	0.73329
sky130_osu_sc_18T_hs__tnbufi_l	(A * !Y)	0.00000	0.00000	0.00000
	(A * !Y)	0.01873	0.05105	0.48809
	(!A * Y)	0.00000	0.00000	0.00000
	(!A * Y)	0.01338	0.04628	0.48464

SKY130_OSU_SC_18T_HS__XNOR2

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__xnor2_l	21.24540

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_osu_sc_18T_hs__xnor2_l	0.01125	0.01035	2.19817

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__xnor2_l	0.00000	2062.49000	3483.86000

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__xnor2_1	A->Y (RR)	B	0.06404	0.48928	6.41161
	A->Y (FR)	!B	0.03000	0.57335	8.40939
	B->Y (RR)	A	0.05131	0.48929	6.66954
	B->Y (FR)	!A	0.04359	0.55637	8.02481

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__xnor2_1	A->Y (FF)	B	0.06863	0.50848	6.67745
	A->Y (RF)	!B	0.03517	0.54277	7.96256
	B->Y (FF)	A	0.05797	0.50126	6.72492
	B->Y (RF)	!A	0.04565	0.55213	7.91737

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__xnor2_l	A	B	0.00000	0.00000	0.00000
	A	B	0.06883	0.10812	0.68689
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.02216	0.08116	0.87367
	B	A	0.00000	0.00000	0.00000
	B	A	0.06175	0.10762	0.76682
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.02533	0.08004	0.83159

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__xnor2_l	A	B	0.00000	0.00000	0.00000
	A	B	0.08450	0.12865	0.76238
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.09466	0.14413	0.85034
	B	A	0.00000	0.00000	0.00000
	B	A	0.10843	0.15433	0.79627
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.06860	0.11841	0.82461

SKY130_OSU_SC_18T_HS__XOR2

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__xor2_1	21.24540

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_osu_sc_18T_hs__xor2_1	0.01127	0.01040	2.23690

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__xor2_1	0.00000	2063.07000	3537.02000

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__xor2_1	A->Y (RR)	!B	0.05878	0.48940	6.68821
	A->Y (FR)	B	0.03984	0.56934	8.34760
	B->Y (RR)	!A	0.05247	0.49035	6.74256
	B->Y (FR)	A	0.04221	0.56784	8.27010

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_osu_sc_18T_hs__xor2_1	A->Y (FF)	!B	0.05679	0.48879	6.45164
	A->Y (RF)	B	0.03701	0.56735	8.21651
	B->Y (FF)	!A	0.05414	0.49695	6.71714
	B->Y (RF)	A	0.04304	0.53647	7.73413

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__xor2_l	A	B	0.00000	0.00000	0.00000
	A	B	0.05915	0.11694	0.90861
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.03453	0.07815	0.73309
	B	A	0.00000	0.00000	0.00000
	B	A	0.05984	0.11712	0.89187
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.03277	0.07921	0.75181

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_osu_sc_18T_hs__xor2_l	A	B	0.00000	0.00000	0.00000
	A	B	0.09571	0.14903	0.89670
	A	!B	0.00000	0.00000	0.00000
	A	!B	0.08280	0.12583	0.71630
	B	A	0.00000	0.00000	0.00000
	B	A	0.09337	0.14448	0.87132
	B	!A	0.00000	0.00000	0.00000
	B	!A	0.08074	0.12780	0.77956

SKY130_OSU_SC_18T_HS_x

sky130_osu_sc_18T_hs_ff_1P95_150C.ccs
Cell Library: Process , Voltage 1.95, Temp 150.00

Truth Table

INPUT
A
x

Footprint

Cell Name	Area
sky130_osu_sc_18T_hs__ant	6.59340
sky130_osu_sc_18T_hs__tiehi	6.59340
sky130_osu_sc_18T_hs__tielo	6.59340

Pin Capacitance Information

Cell Name	Pin Cap(pf)
	A
sky130_osu_sc_18T_hs__ant	1.76910
sky130_osu_sc_18T_hs__tiehi	0.00000
sky130_osu_sc_18T_hs__tielo	0.00000

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_osu_sc_18T_hs__ant	0.00000	675982.00000	1351960.00000
sky130_osu_sc_18T_hs__tiehi	0.00000	0.00000	0.00000
sky130_osu_sc_18T_hs__tielo	0.00000	0.00000	0.00000

Passive Power Information

Passive power(pJ) for A rising :

Cell Name	Power(pJ)		
	first	mid	last
sky130_osu_sc_18T_hs__ant	0.00000	0.00000	0.00000
	0.00102	0.25654	3.39825

Passive power(pJ) for A falling :

Cell Name	Power(pJ)		
	first	mid	last
sky130_osu_sc_18T_hs__ant	0.00000	0.00000	0.00000
	11.76030	11.19550	3.90789